

Royal Air Force

SOUVENIR BOOK 1967

Published Annually on the Anniversary of the Battle of Britain



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Royal Air Force SOUVENIR BOOK 1967

Published Annually on the Anniversary of the Battle of Britain

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◊ SIX COMPETITION ENTRIES ©

1st prize (50 gns) this year to Wg Cdr Richards for his amusing short story *Bogdonov's Test Flight*; another story 'My Word!' (30 gns.) in 2nd place. Frank Chasemore RAFA is 3rd with another N W Frontier tale, which fits in well with the Indian and Pakistan Histories. *The Paper Battle* covers a little-known aspect of 'The Battle', and extracts from AP 1081 might persuade MOD to produce an up-to-date version to boost British morale in an age of frustrating recession. Wg Cdr MacDonald's light-hearted verses should do the same? ©

© GOLDEN JUBILEE EDITION 1968 ©

Competition entries for 1968 must reach us *this December*. A bumper edition of the Souvenir Book, will be published *before the RAF's 50th birthday next April* and will contain a detailed history of the RAF, a full account of the new RAF Museum and bags of nostalgia. Please see my Editorial ©

Foreword

DESPITE THE TRAGIC CANCELLATION OF AFVG—tragic for the British Aircraft Industry as well as the RAF—and a minor tragedy for us too, since we had chosen the general theme of Anglo-French collaboration as being of the utmost significance, major transformations are taking place in the Royal Air Force, as described in CAS's Forecast, to meet its vital role in upholding Britain's status as a significant Power amongst the Nations of a swiftly changing World. Not only are all our old aircraft rapidly giving way to new, but radically new Command Structures have now been substituted for those which have existed long enough to be considered traditional. In fact, the RAF is taking nothing short of a revolution in its stride, absorbing and digesting new defence ideas and responsibilities with that ready adaptability which has long been one of its fine traditions. *Jaguar* will proceed, at any rate, and we report on its progress; and despite incessant threats and warnings about their cancellations, we feel that several Anglo-French military and civil projects will come to fruition, as reported by Keith Thompson of the Daily Express.

There is also a tragic undertone to the two splendid Histories which the respective Cs-in-C of the Indian and Pakistan Air Forces have contributed this year, since these two offspring of the RAF have, since Partition, been compelled to fire their guns in anger at each other. Next year's Souvenir Book will devote considerable space to a History of the Royal Air Force itself, so completing our series on the Commonwealth Air Forces. The Editor also hopes to publish a more detailed and copiously illustrated bound commemorative volume *Concise Histories of the Air Forces of the Commonwealth* next year, which will also contain an introductory essay on the Origins of Air Power.

Readers and entrants for our annual editorial competition alike should note that the 1968 Souvenir Book will be the sole official commemorative publication for the

Golden Jubilee, and we are thus endeavouring to produce a very much enlarged edition for initial issue before April 1st. It will remain on general sale throughout the year, with special inserts to cover individual RAF Exhibitions, Flying displays and 'At Homes'. *Competitors should therefore submit their entries to us before the end of December and bear in mind the historical nature of the occasion.* In particular, articles relating to personal experiences during the many significant phases of the development of the Service from its inception are likely to catch the judges' eye. The Committee is now considering the publication of many more entries than usual, if suitable in quality and content, and the offer of more and enhanced prizes.

John Reid



ALL PROCEEDS TO RAF BENEVOLENT FUND AND ROYAL AIR FORCES ASSOCIATION 3-

What the future

Air Chief Marshal Sir John Grandy GCB KBE DSO

Sir John Grandy, born 1913, joined the RAF in 31. A Flying Instructor until the war, he led 249 Hurricane Sqn during the Battle of Britain, later commanding Duxford, where the first Typhoon Wing was formed, before taking over fighter units in the Middle East. He won the DSO for air supply ops on Dakotas in SE Asia, and after Army Staff College in 46 became DD Ops Training at Air Ministry. Other appointments include Air C'dore Ops at Fighter Command and Commandant at CFE. After the IDC course in 57, Sir John commanded 'Grapple', responsible for British Nuclear Tests in the Pacific. Before becoming CAS this April, he was ACAS Ops in 58, Commander 2nd TAF in Germany and C-in-C of Bomber Command and then Far East Command



THIS is the first occasion since I was appointed Chief of the Air Staff that I have had this welcome opportunity to contribute to the Royal Air Force Souvenir Book, and I propose to take stock of where the Royal Air Force stands today and what the future appears to hold for it. I would like to look at two particular fields: the future organisation of our operational Commands at home, and the aircraft in our re-equipment programme and the tasks on which they will be employed.

The next few years will see great changes in the disposition and roles of the RAF's front-line. The force of the 1970s will be somewhat smaller in the terms of numbers of aircraft than that of today, and much smaller, of course, than the RAF front-line of 25 years ago, for which the existing UK operational command structure was designed. This change in front-line strength reflects both changing commitments and the vastly increased fighting power of modern aircraft and weapons.

Perhaps the most important change in the future will be the revision of our overseas forces structure and the consequent need to meet a greater part of our overseas commitments by means of forces based in the United Kingdom. This will require our home-based forces to be ready to deploy anywhere overseas at a moment's notice and to operate without support from facilities currently provided at our overseas bases.

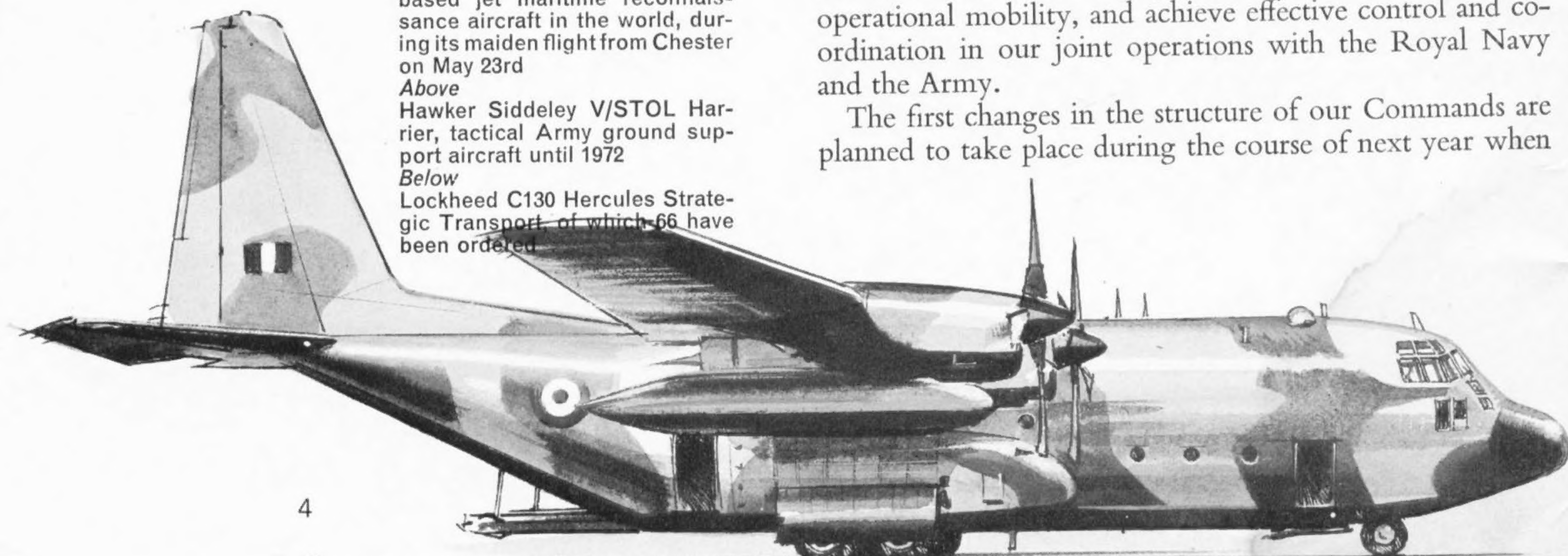
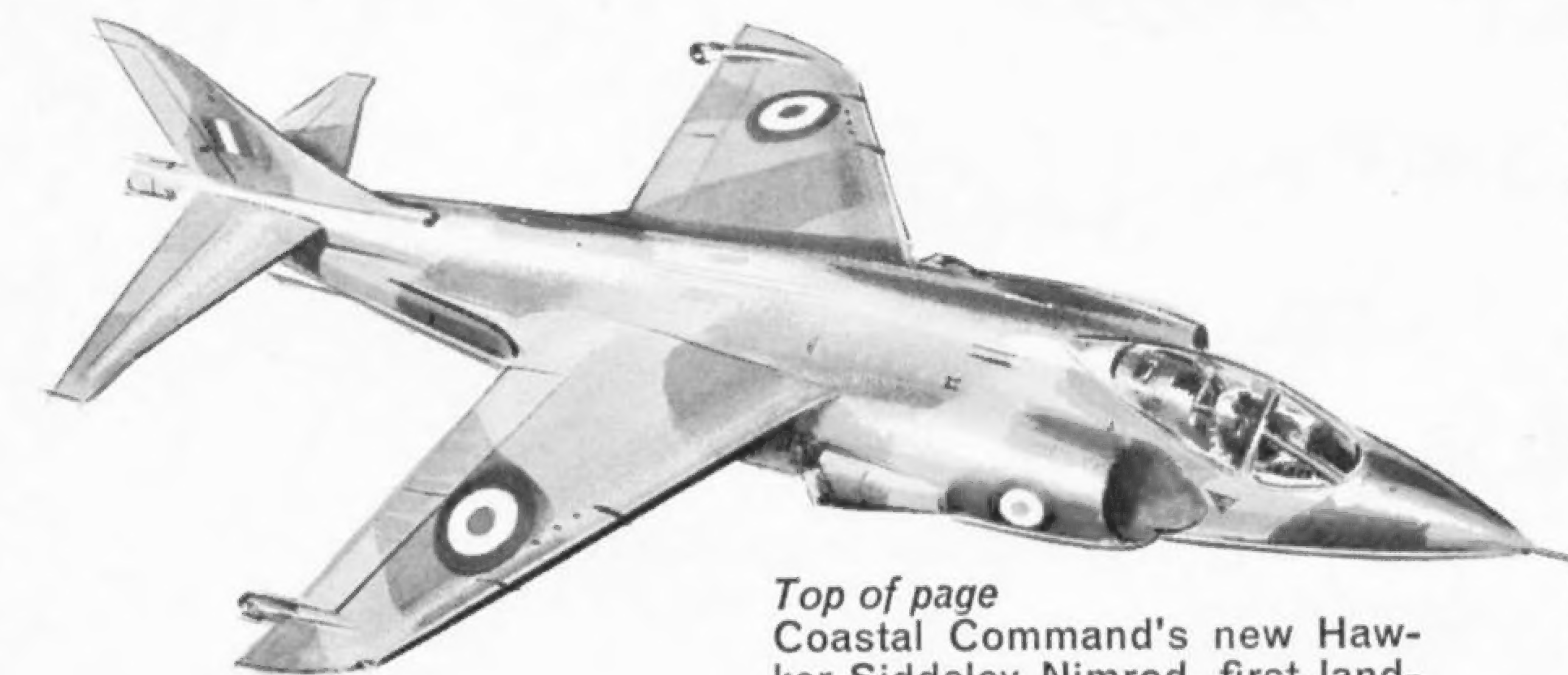
We have foreseen for some time that these changes will require major alterations in our UK operational command structure, in order that we can exploit the full potential of our new aircraft and equipment, develop the maximum operational mobility, and achieve effective control and co-ordination in our joint operations with the Royal Navy and the Army.

The first changes in the structure of our Commands are planned to take place during the course of next year when

Top of page
Coastal Command's new Hawker-Siddeley Nimrod, first land-based jet maritime reconnaissance aircraft in the world, during its maiden flight from Chester on May 23rd

Above
Hawker Siddeley V/STOL Harrier, tactical Army ground support aircraft until 1972

Below
Lockheed C130 Hercules Strategic Transport, of which 66 have been ordered

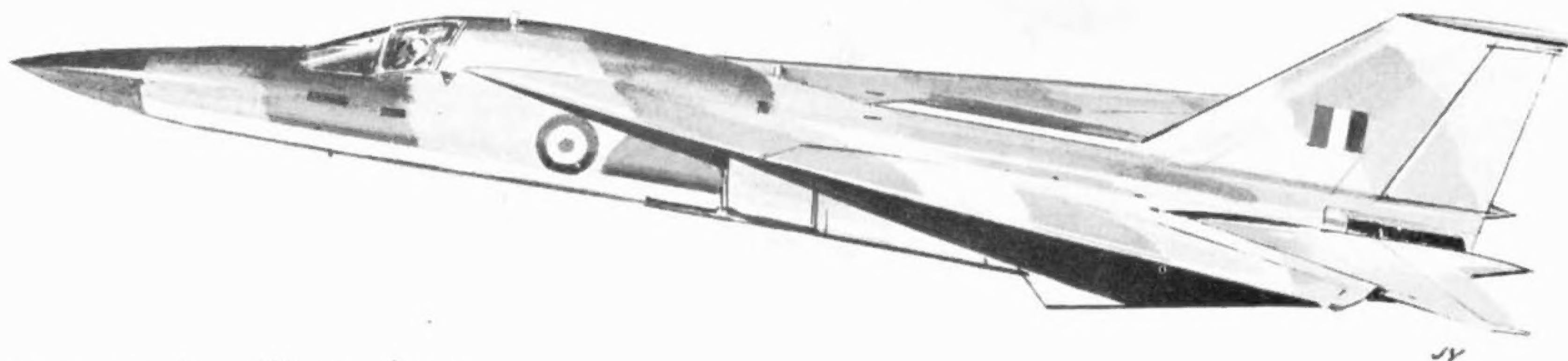


holds...

a forecast by the new Chief of Air Staff

Right

The RAF's F111K force, due to be operational in 1969, will have a performance well in excess of requirements at that time.



the present Fighter and Bomber Commands will combine to form a new Strike Command. The H Q will be at High Wycombe, with Nos 1 (Bomber) and 11 (Fighter) Groups controlling the Strike and Reconnaissance, and Air Defence elements of the Command. As a preliminary step Nos 1 and 3 Groups of Bomber Command are being combined before the end of this year.

Transport Command, its re-equipment programme well advanced, is now called Air Support Command, in its present form, together with its subordinate formation No 38 Group, containing both tactical transport and ground attack elements. This Group's importance will grow in conjunction with the development of the Army's Strategic Command. We are still studying the future of Coastal Command, which is closely linked with possible changes in the naval command structure—here our paramount consideration is effective control of joint operations with the Royal Navy.

Bomber and Fighter Commands have both played glorious and honourable roles in the defence of our country to which we all pay high tribute. There will doubtless be a degree of nostalgia, indeed of sadness, that these two great Commands are now to go. But it is essential that we design our command structure both to handle current trends and concepts and to meet the ever-present demand for economy, and I have no doubt that our new Commands will be fully worthy of their great predecessors.

Our aircraft re-equipment programme is progressing most satisfactorily. The VC10 and the Belfast are already in service with Transport Command and have been joined this summer by the C130 Hercules, of which 66 have been ordered. The Hercules squadrons will be based at Lyneham and Fairford, and in the Far East. The first Phantom for the RAF flew in February this year. Although this is basically an American aircraft, over 45 per cent of its cost is for UK-built equipment, including the engine and

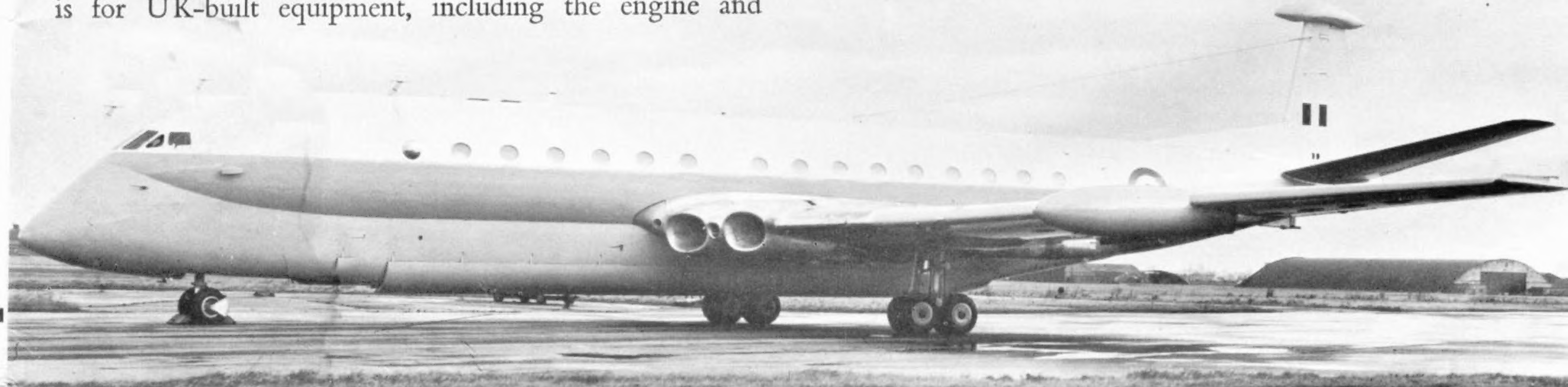


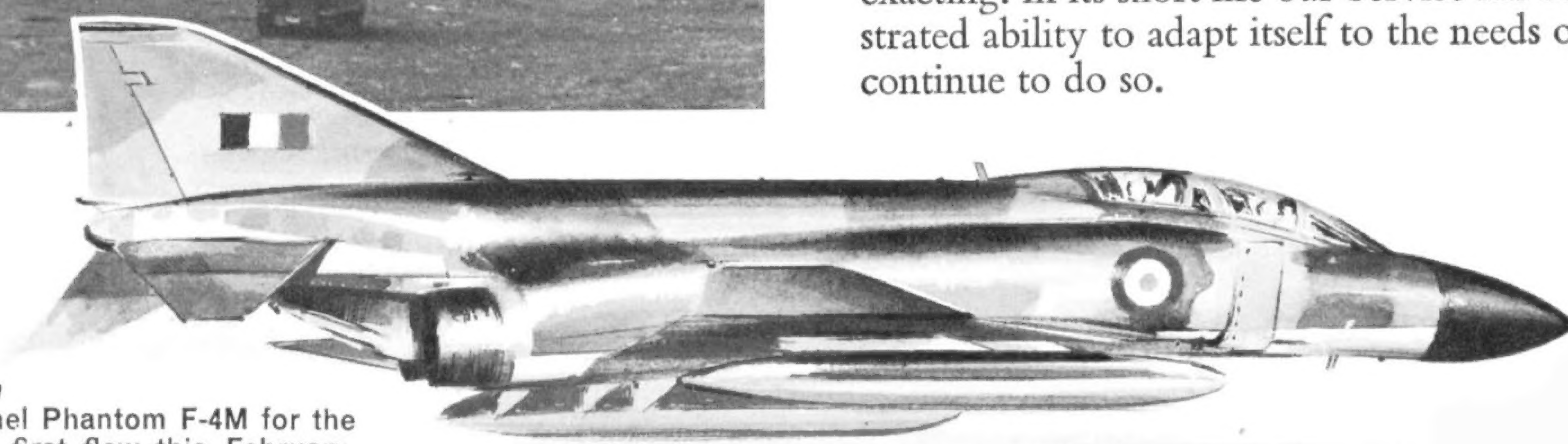
Above
Transport Command's fast, long range jet transport, the BAC VC-10



Below
The BAC/Breguet Jaguar, which will supersede the Phantom for army ground attack operations in 1972

Fighter and Bomber Commands Combine All New Aircraft





Top & Bottom
The McDonnell Phantom F-4M for the RAF, which first flew this February, intended for ground attack until 1972, then for air defence in lieu of the Lightning
Centre Another view of the BAC/Breguet Jaguar

avionics. Crew training for the Phantom will begin next year at Coningsby, and at the end of this decade we plan to deploy Phantom squadrons to Germany, the Far East and the Persian Gulf. The squadrons based in the Persian Gulf will be provided on rotation from Coningsby. The Phantom will, in conjunction with the Harrier, carry out ground attack operations in close support of the Army until 1972, when it will be superseded in this role by the BAC/Breguet Jaguar. The Phantom will then assume the air defence role at present undertaken by the Lightning.

On our present plans, our F111K force, which is due to be operational in 1969, will carry out detachments overseas from Honington. This magnificent aircraft will have a performance well in excess of our requirements by the time it enters service with the Royal Air Force. By the mid-70s, the F111K force was to be supplemented by the AFVG aircraft, to replace the V-bombers, a new replacement for which is being re-examined.

Development and production of the Nimrod, which will replace the Shackleton Mk 2 in 1969/70, is going ahead, and the first aircraft flew earlier this summer. The Nimrod, which is the first land-based jet maritime reconnaissance aircraft in the world, will be fitted with a wide range of sophisticated equipment and will be capable of high transit speeds between its base and its patrol area.

The re-equipment programme for our helicopter force will be based on two types—the French SA330 and the American Chinook. The SA330, of which we plan to order about 50, will supplement the Wessex force in providing tactical support of the Army in forward areas. It will carry a greater payload than the Wessex, and will be easily air-portable—a great asset when our strategy will be based on rapid reinforcement of areas overseas. This helicopter is expected to be in service in 1970. Fifteen Chinooks, which have a British avionics fit, have been ordered for delivery in 1969, and will provide heavy logistic support for troops in forward areas.

The Royal Air Force, as it approaches its 50th Birthday, enters a period which, with the re-equipment programme, the re-organisation of its Commands, and redeployment both at home and overseas, promises to be turbulent and exacting. In its short life our Service has constantly demonstrated ability to adapt itself to the needs of the day; it will continue to do so. ©



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Franco - British Co-operation.

The vital importance of Inter-dependence

Marshal of the Royal Air Force

Sir John Slessor

GCB DSO MC JP CC

... the first several aeroplanes
we flew more than 50 years ago
were French ...

It is not always easy to remember that when many of us older airmen were young officers, Great Britain was still the richest and most powerful nation in the world, the centre of a vast Empire straddling the Earth from North America through Africa and Asia to the Pacific. We know that we were the first people to have an autonomous Air Force; but the eclipse of France in 1940 tends to make us forget that the first several aeroplanes we flew more than 50 years ago were French—the old Farmans, the Caudrons and Bleriets, the Morane and the handy little Nieuport Scout.

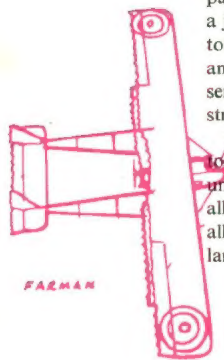
There is a synthesis in these two ideas. It called for a bit of an effort of mental adjustment to accustom ourselves to the thought that we are no longer one of the giants—that the *Pax Britannica* is a thing of the past; on the whole I think we have not made too bad a job of it. Most of us now realise that the watchword today is no longer independence but inter-dependence, and that the only defence policy that now makes any sense for any of us is an Atlantic Defence Policy—a strategy of coalition.

The Defence Review of 1966 was realistically down-to-earth about that. It stated clearly that we intend to undertake major operations of war only as part of an alliance and that—again except in co-operation with allies—we cannot expect to be able to launch assault landings against various opposition beyond the range

of land-based air cover. These principles are not so much a policy of our own free choice as a pragmatic recognition of the unsuitable political, economic and military realities of the 1960s—an acceptance of the fact that except in quite minor operations we can no longer act except as allies of the United States, though that is not spelt out in so many words. We have other allies, and must consolidate our ties and in combination with them make a more formidable contribution to the Alliance than any of us could on our own; but for us and them it is vain to imagine that any kind of European military coalition can in itself ever secure the peace without the support of the United States. And America needs us little less than we need her.

Some of us do not like this. Our Left-wingers and Aldermaston agitators make a habit of abusing the United States and enjoy noisy demonstrations against their policy in South East Asia ... while at the same time clamouring for the withdrawal of the British forces which alone can give us a real claim to a share in the formulation and conduct of policy in that part of the world. Others across the Channel elect to behave as though self-sufficiency in defence still made sense for secondary Powers, enjoying the luxury of being rude to the Americans and a dangerous embarrassment to others. But they all do it secure in the knowledge that they do it under the umbrella of the nuclear and conventional might of the United States, who have accepted the responsibilities of world power inherent in their colossal strength—for which we should be profoundly thankful.

There are however, some also who—without going that far—do not understand that this new state of international affairs is not a one-way street; that the word is *inter-dependence*, not dependence, and that if we are to continue to enjoy the advantages and cut any



FARMAN



in the World today.

ice in the councils of the Alliance, we cannot expect that the United States will be content to shoulder alone the whole burden of protection of Western interests from Portsmouth to the Pacific. That means we must take our due share of that burden, must be willing and able not only to play our part in the defence of Europe, but elsewhere to act alone where we can act alone and be worth having as an ally where we can not. In other words, we must maintain forces of the strength and quality required to back our policy as a loyal ally in NATO, and fulfil our responsibilities as a world power—which we still remain, even though now in the second category. If only for the reason that we are a nation dependent for our living on world trade, we simply cannot afford to shrug off all our world-wide responsibilities in favour of bigger and better betting shops and bingo halls and shiny new motor cars on the never-never.

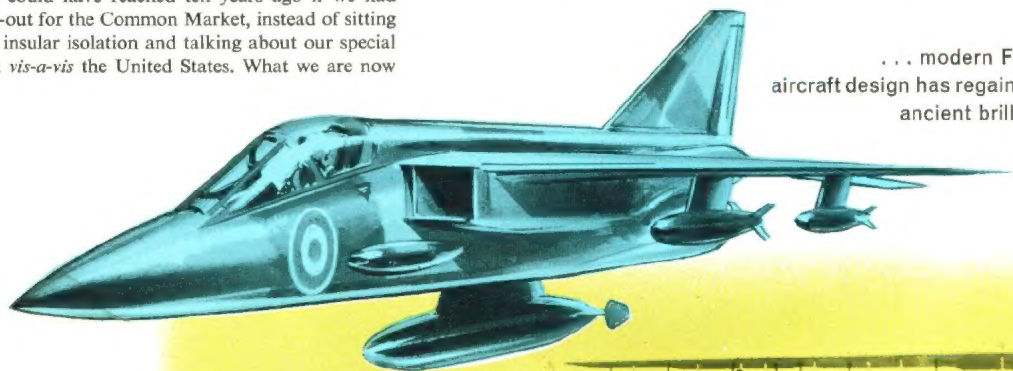
It is perhaps hardly necessary to emphasise here that modern weapons even of the conventional type, and the means of moving our forces to wherever they may be needed with the rapidity which their diminished size demands, are today appallingly expensive (one sometimes wonders whether a more sophisticated look at what really happens to the Defence Pound might not show the economic effects of military expenditure to be less disastrous than commonly supposed—but the fact remains). A failure until too late to realise that independence in the field of weapon production is as outdated as it is in the field of strategy has cost us dear in recent years. We have now at last arrived at the point that we could have reached ten years ago if we had gone all-out for the Common Market, instead of sitting back in insular isolation and talking about our special position *vis-a-vis* the United States. What we are now

faced with—quite apart from defence—is a new industrial revolution, the scientific and technological revolution, in which we are extremely well qualified to play a leading part. In the field of weapon production we seem at last to be hoisting in that our true role is that of a primary partner in a great European complex of design, development and production, with a European and even wider market capable of making that production an economic proposition. We should have realised earlier that, after that curious black-out, not only during but before the late war, modern French aircraft design and engineering has regained its ancient brilliance. And we in the RAF have the best of reasons to know the quality of German techniques in the aircraft field—it was indeed fortunate for us 25 years ago that the excellence of those techniques and the valour of German airmen were frustrated by the crazy ineptitude of Messrs A Hitler and H Goering.

We have an enormous contribution to make to a Common European pool. We have superb designers, scientists and production engineers; we have airmen with imagination and drive, and vast experience in war and peace. It is no good now lamenting that we are having in the first place to buy from America an aeroplane—the excellent F111K—incorporating the great invention of Dr Barnes Wallis. We are putting that belatedly right by developing with the French the variable geometry aircraft which will replace the trusty V-bombers in the 70s. The Jaguar is coming along to relieve the Phantom at about the same time, which will then take over from the Lightning as our all-weather fighter. And who knows but that Concorde may in due course be found to fit a military requirement.

These will not be the last, but the first. The whole grand design will take time to reach fruition. But it is surely not too visionary to believe that in ten years' time a great European consortium—British, French, German, Dutch, Italian—may well be equipping the air forces and airlines (and not only of Europe) with aircraft at prices we can all afford to pay and which will owe much to British experience, skill and imagination. ○

... modern French aircraft design has regained its ancient brilliance ...





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Franco - British Co-operation 2

The Key to New Strength in Aviation

by Keith Thompson, Daily Express



Jaguar and Concorde at the Paris Air Show 1967

EARLY IN JULY a crestfallen Mr Denis Healey, Minister of Defence, had to tell Parliament that his grand idea to build a swing-wing interceptor-strike jet aircraft with France had fallen through. The French Government had pleaded shortage of funds, and no-one who had examined the books could doubt that the French defence budget was running very high.

But with the failure to get the Anglo-French Variable Geometry (AFVG) jet off the drawing board Mr Healey lost much prestige. He had a heavy time explaining away his predicament to angry MPs—particularly the Tory opposition. After all, he had described the AFVG project in a Defence White Paper as being the 'core' of future planning for the Royal Air Force. It would also have kept Britain's aircraft in the Big League, provided a replacement for the ageing V-bombers in the early 1970s, and averted new purchases of military aircraft from the United States involving the spending of millions of precious dollars when the economic crisis is far from over.

Mr Healey had, however, silenced the critics. Overtures were still being made in Europe, he said, to get other partners in on a swing-wing project. There were decided possibilities of collaboration with Italy, Germany and Holland: all was not lost. And there was still the remote hope that Britain could go-it-alone, but with a very tight rein kept on expenditure. There could never be another TSR-2 tree-top H-bomb venture where

costs rocketed daily, said Mr Healey's colleagues in the Labour Government: that had cost the country £200,000,000 before it was ruthlessly cancelled. Whether this decision was right or wrong is still being argued. I certainly consider the Government's action rash and ill-considered . . . and ordering a batch of fifty F 111 K swing-wing jets from America to plug the gap certainly gave the Government's critics powerful ammunition in debate.

The Royal Air Force, of course, was grateful that another advanced aircraft had been added to its long-term 'shopping list'—and that it was being built around a special UK requirement. But on the other hand the collapse of the AFVG venture was a serious blow, particularly to the Air Staff, because the twin-engined jet fighter-bomber was to have been supplemental to the small batch of F 111 Ks. However, the set-back—and it cannot be minimised—did *not* spell the final death of the British aircraft industry, which is much too resilient.

Already a success story

What seems to have gone virtually un-noticed is the remarkable success story of collaboration between Britain and France on a whole new range of exciting aviation and space projects, which augur well for joint working over the next two decades. They alone promise to forge the most formidable industrial combine of its

The A 300 European 'Air Bus' is the answer to the continual expansion of traffic on short-haul and medium routes—from 200 to 2000 miles. It can carry up to 300 passengers at 500 mph—faster as a military troop transport. Britain, France and Germany are collaborating and BEA, Air France and Lufthansa could have it in service by 1973, powered by Rolls-Royce RB207 'advanced technology' engines



kind outside America and Russia. A massive platform has already been created, thus providing a solid base for many other European countries to link forces. And it is a posture which, according to the pro-Common Marketeers, proves that Britain's intentions within Europe are genuine—backed by full-scale industrial effort, and not mere words.

In aero-space activity Britain and France possess enormous resources . . . in finance, manpower, but especially know-how, knowledge, 'brain power'. Probably the two countries combined still have the finest aviation-space scientists in the world, despite the so-called 'brain drain'. France's industry is geared to a 'fixed' labour force of around 100,000, compared with Britain's 250,000. It links public and private enterprise; but the association is without conflict. The French

Government sets-up its own Five Year Plans, but the feed-in of ideas, future policy and projects, is a two-way business, and new test facilities and factories are springing up all over France. So Britain has chosen an ideal partner.

Concorde was the start

The first real step to large-scale collaboration came on November 29, 1962, when the two Governments signed an agreement to work on the Concorde supersonic airliner. It was (and still is) a fifty-fifty arrangement, with finance, production-lines and test work all split down the middle. Two prototypes are now nearing completion, and the first will make its maiden flight from Toulouse in Southern France probably at the end of February next year; the second will lift off the ground a few weeks later from Filton airfield near Bristol.

Already a staggering £500,000,000 has been allotted jointly to the programme by the two Governments, and even more money will undoubtedly be needed. But this is the sort of capital that must be ploughed into the most ambitious civil airliner programme ever undertaken. The costs and stakes are so high that even the American supersonic airliner programme is moving forward at half-pace. So Concorde's lead on what must be its only real rival in the Western world could stretch to even more than the present estimated three years.

There have been troubles, even reports that Concorde will be cancelled a few months off the first flight date, and the question is still being asked whether the plane will succeed. That probably depends on whether the 1450 mph jet can live up to the very rigid specifications first laid down six years ago, and then up-rated two years later to improve world-wide market appeal. So far more than 70 have been sold (at about £7,000,000



Concorde 002 prototype at BAC Filton works. Due in airline service in 1971, it will fly from London to New York in 2½ hours at 60,000 ft. Nearly 150 passengers can now be carried

each) to 16 world airlines. Market estimates are that as many as 400 may eventually be ordered. Airlines which have ordered Concorde—they prefer to use the word 'option', to ensure a place in the delivery queue—do believe it will surmount the many major problems that inevitably beset such an ambitious programme. In other words, it should be a success, recovering the enormous initial investment.

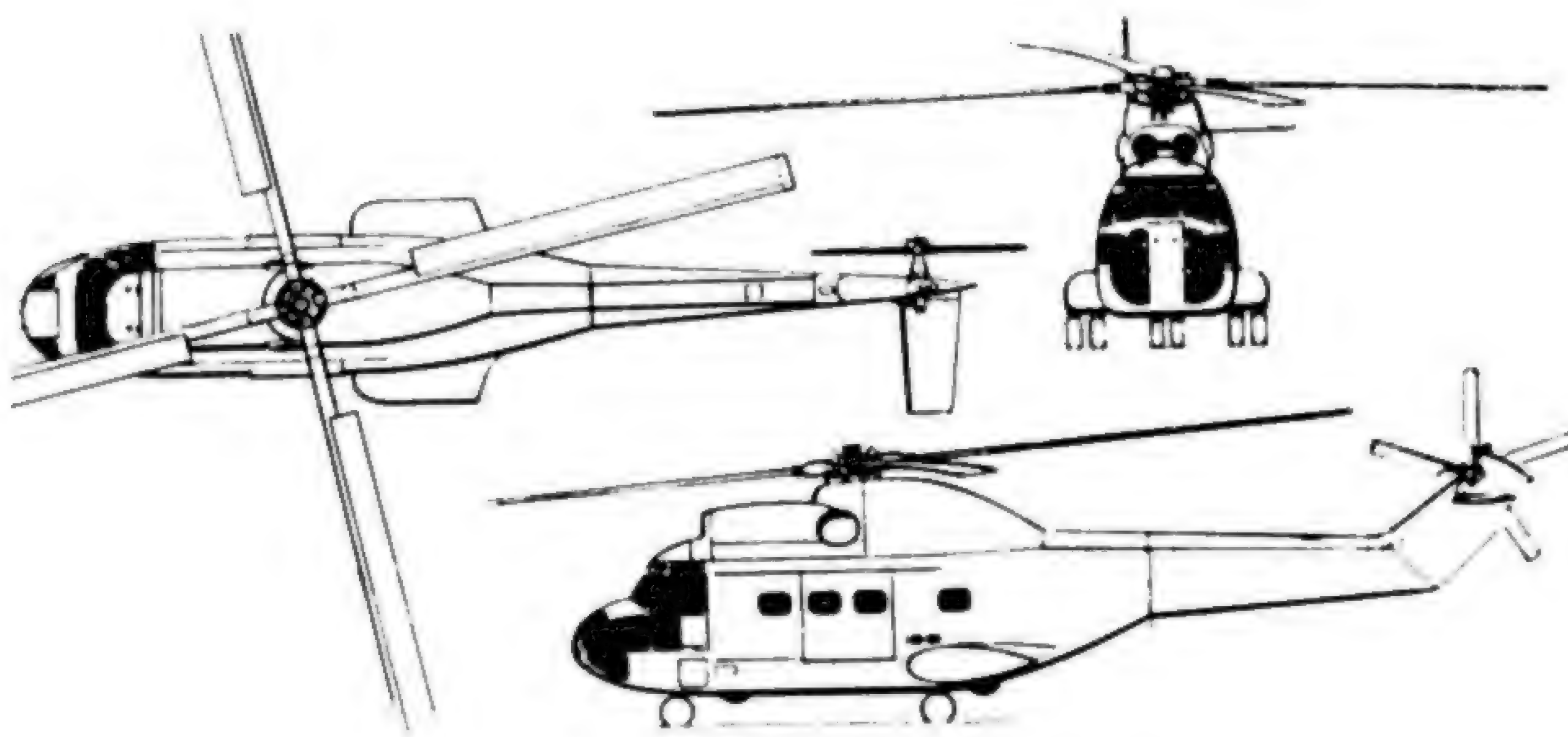
It is vitally important to discuss a civil project like Concorde because it was the real beginning of Anglo-French collaboration. With its enormous size and scope—maybe even *risk*—the partners *had* to realise that aero-space is a big and expensive business. It also taught them that actually working together is not easy: there have to be the formative years in so new a concept. So, in many respects, Concorde provided the key to the whole spectrum. Engine manufacturers Bristol Siddeley—now part of the giant Rolls-Royce company—began working with the French firm of SNECMA on the Olympus 593 supersonic civil jet for Concorde, and again there is a complete division of work. Forty-four engines have been ordered for the first six Concorde, with the engines required for actual flight testing being delivered at the rate of two a month from December.

First military venture

It was not until May 1965 that the first significant Anglo-French military venture was formalised. Jaguar is the name, an advanced trainer and tactical support aircraft for the 1970s. When the 'memo of understanding' was signed between the two Governments on May 17, British Aircraft Corporation and Breguet (now part of the Dassault company) were named joint primary contractors. The split is again fifty-fifty. The programme has moved quietly but confidently forward, with the first flight date set for March 1 next year from Toulouse. Seven prototypes have been ordered so far: two French strike, two French trainer, and one each for the French Navy, UK strike and UK trainer. Production deliveries are promised early in 1970, their engines being produced by Rolls-Royce and the French company Turbomeca.

The case history of Jaguar spotlights some of the difficulties and many of the advantages of joint working. It was born after talks between the French and British Air Staffs in 1964. But rarely do two Air Forces see eye to eye, and this was the case at the beginning. The French urgently needed a replacement for their ageing T-33 trainers; the British, on their side, required a new aircraft to phase in after the 600 mph Gnat advanced jet trainer. Thus there was some common ground. The French had come up with a design, the Breguet 121, and eventually it was decided that this aircraft—later named Jaguar—would meet the specifications of both countries. Two versions will be available, a single-seat tactical jet and a two-seat sophisticated advanced trainer.

The gap between the two requirements was narrowed. Operational trainee pilots must learn and practice



combat attacks at the right speeds and altitudes. The plane must handle well transonically and faster than sound, and operate at both high and low levels, so that the trainer can be used in the strike role if necessary. Jaguar can also carry a wide range of weapons, despite its light weight and relatively low cost. The actual price of Jaguar is not officially quoted, but it is so attractive that both British and French sales teams are optimistic that as many as 1,000 may be ordered by foreign air forces. There is interest in Europe from Germany and Italy; from South American countries, where there is a universal requirement for new military planes, and a reluctance to 'buy American'; and from Australia and New Zealand. The men behind Jaguar are the first to tell you that collaboration really does work.

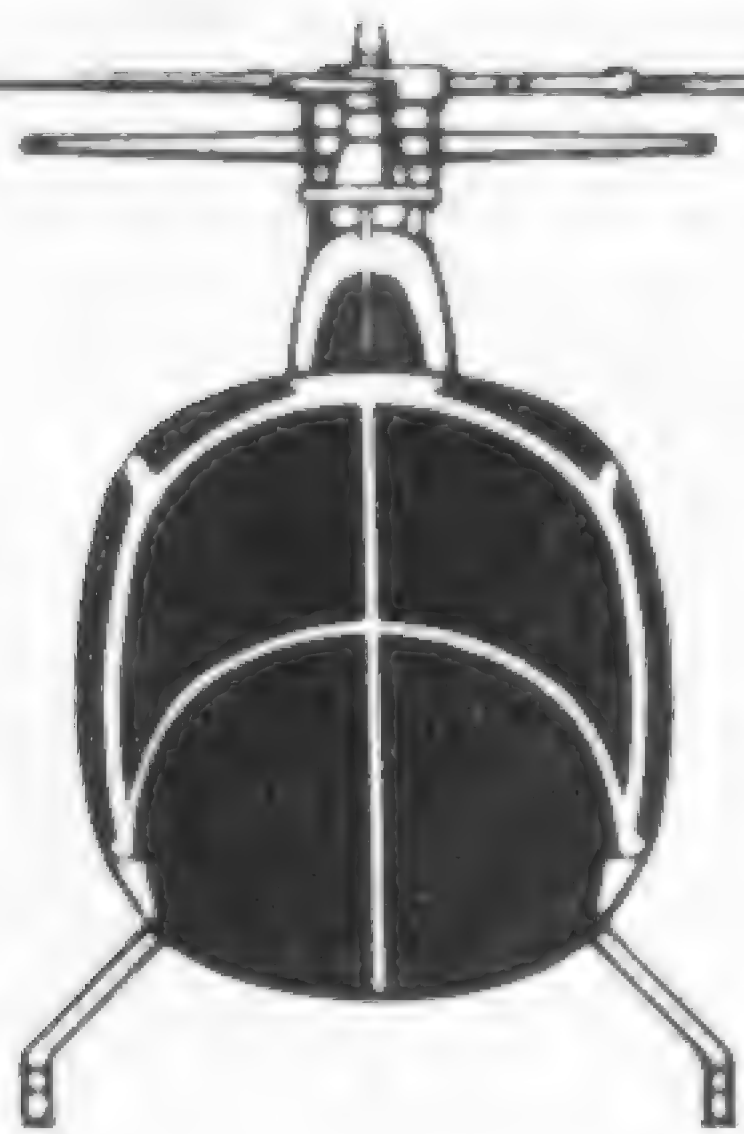
Helicopters and an 'Air Bus'

Earlier this year yet another big collaborative venture was announced, for a range of service helicopters. Many experts believe that the 'memo of understanding' between the two Governments ratified on February 22 was in fact part of a package deal involving the A F V G strike-interceptor, but this has been denied in Whitehall, and there will be a review of the tie-up sometime this month (September). But there are few indications that there will be any change in policy.

Here again, although design leadership on two of the three projects is wholly French, it will help wrest some of the helicopter dominance away from America in terms of high-quantity manufacture, and Westland Aircraft will certainly receive a big chunk of work. The three helicopters are the Sud Aviation 330, a high-density troop transport; the Sud Aviation 340 light helicopter, and the Westland WG 13 utility. British requirements are for more than a 1,000 of the complete range—with over six hundred 330s—and while French Service orders are expected to be more modest, tremendous export possibilities have been forecast.

Britain's traditional expertise in producing aero-engines for almost any sort of role has also helped forge





The Sud-Aviation SA 340 light helicopter replaces the proven Alouette 2 series, but seats 5 with a cruise speed of 155 mph over 400 miles

important links with French companies. Apart from the Concorde and Jaguar power plants already mentioned, there is considerable co-operation on lift engines for a range of vertical take-off projects, and also on several light-weight turbo-fan engines. Rolls-Royce (now including Bristol Siddeley) has links with two of the premier manufacturing companies in France, SNECMA and Turbomeca.

Even in the missile field there is a growing possibility of expanding joint programmes. Co-operation in space through the European Launcher Development Organisation (ELDO) is flourishing with a series of successful rocket launches either from French bases or the Woomera rocket range. But the important breakthrough on missiles came with the signing of a commercial agreement between Hawker Siddeley Dynamics and Engins Matra three years ago, leading to the Martell air-to-surface missile, with alternative guidance systems, either electro-magnetic or television. Major systems suppliers are Marconi (UK) and Electronique Marcel Dassault (France), another example of Franco-British 'partnership'.

Virtually certain to be approved is the proposal to build a European 'air bus'—a 250- to 300-seat medium-haul jetliner for service in the early and mid-70s. Britain and France are confident that Germany will come in as a third partner in the venture—perhaps taking out a 20 per cent financial and production stake. Mention of yet another civil project is not irrelevant, for there is considerable talk at British Government level of considering an 'adapted' air bus for trooping and freight work, to fly at 600 mph, and able to use medium-sized airfields. Military orders would certainly help to cover the research and development costs, estimated at £160,000,000 for airframe and engine. But so far no RAF Operational Requirement (OR) has been submitted for an 'air bus' type of aircraft, although senior officers in Transport Command are known to be looking with interest at the giant 500- to 700-seat C5-A project for the USAF.

Advantages outweigh pitfalls

What then are the advantages, and the pit-falls, of co-operation, specifically with France? It has been discovered with Concorde that there is little geographical problem. Shipping and air-freighting vital parts, instruments, systems and engines between the two

countries has worked smoothly, and the techniques have passed down to later projects. From management to shop floor the language barrier has quickly disappeared. Ideas generate, it seems, far more quickly round the conference table or the drawing board. In consequence, on one side or the other techniques are always being improved. With the massive investment now needed to stay as a leader in the aircraft and space business the sharing of costs is an obvious advantage.

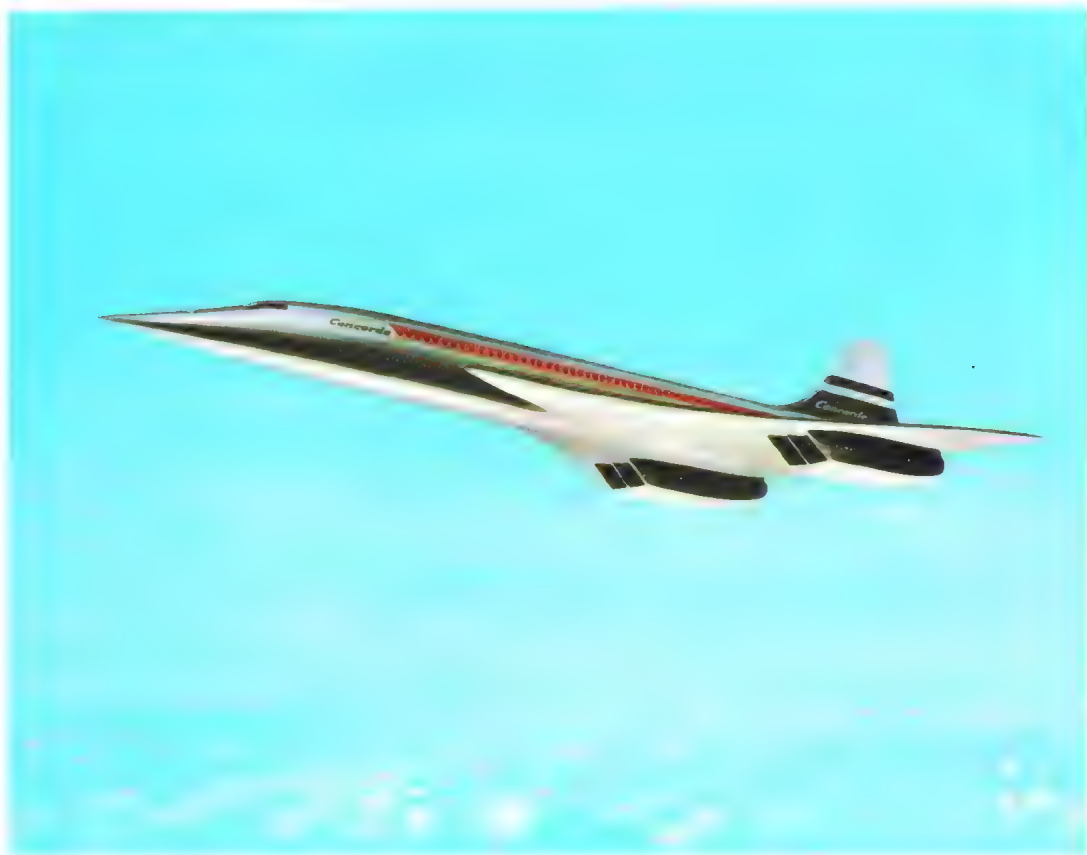
Politically it *must* help draw Europe (not only France and Britain) closer together, whatever the pros and cons of the Common Market concept. The aviation-space links have proved that industry as a whole can get together and surmount initial teething troubles. On the other hand, there is a powerful political and aviation 'lobby' in Britain which complains that France is reaping most of the benefit from the present range of agreements.

It is true that France has won design leadership on the majority of projects, and this has certainly not been encouraging to design staffs with British companies; some have consequently 'exported' their talent to America or Canada, others have even gone over to French firms. Probably the 'air bus' design will also go to France. But the terms are that there must be a two-way exchange. And Britain dominates in the aero-engine field—a vital area of technology in which we still lead the world.

Arguments are also present that the 'arrangements' could collapse because of a sudden change inside the French political structure, for instance. They do not hold much water. Stiff penalty clauses can be invoked if either partner should withdraw. Most of the programmes have been entered into for political necessity, but with detailed back reference to Service Department requirements.

There have been differences over finer points . . . like marketing, for instance. French salesmen do not consider our approach to potential customers forceful enough. But our salesmen have taken the rebuttal phlegmatically: there isn't much point in having a silent partner in a massive venture involving hundreds of millions of pounds. But I have not yet met anyone who really understands the heart and mind of the British and French aircraft industries who sees anything but success coming from Franco-British collaboration. It is the key to new strength in a vital sector of technology. ©





**Keith Thompson
reports
on aviation
in the
Daily Express**

Progress on Jaguar and AFVG

THE first Anglo-French aviation projects of the present generation were the Concorde supersonic airliner and *Martel*, an air-to-ground tactical missile. Then in May 65 Anglo-French co-operation received a further powerful boost with the launching of two new military aircraft, Jaguar and AFVG (Anglo-French Variable Geometry) when the Ministers of Defence for the two countries signed their 'Memorandum of Understanding', naming British Aircraft Corporation as the UK company on both programmes for airframe design and manufacture, in partnership with the French companies Breguet Aviation on Jaguar and Avions Marcel Dassault on AFVG.

Jaguar is designed for advanced training, tactical support and naval aircraft roles, and planned to enter service with the French Air Force in 1971. Service with the Royal Air Force will follow about two years later, when it will replace the Gnat and Hunter. The AFVG programme is geared to a later time scale, starting its RAF service career around 1975. The essential flexibility of the variable geometry feature will allow AFVG to fulfil two widely different primary roles—long range low altitude strike in the RAF and high altitude high Mach-number interception in France. Similar co-operative arrangements have been made for engine design and production. Jaguar will use two *Adour* engines made by a new joint Anglo-French company,

export potential of the product is thereby increased, especially since an aircraft built to the needs of two air forces is more likely to satisfy other users than a single machine designed to the specialised requirements of one. Other advantages of co-operation are less obvious. On the industrial side the cross fertilisation which occurs when two companies embark on a new project together are very beneficial, for new methods are introduced and a stimulating degree of technical challenge is a particular feature of the design and project study phases. Further, a clause of the original agreement stated that costs and benefits would be divided equally between the two countries, which has promoted co-operation over the whole spectrum of equipment manufacturers as well as the primary engine and airframe companies. Consequently, exchanges of ideas are being made in a score and more firms supplying a diverse range of products such as oxygen systems, electronic equipment and all the other material used in a modern military aircraft.

By contrast, the penalties of co-operation are small. Overall costs for the development and production phases are slightly higher, but the total bill is being divided between France and England, which in any case are close enough geographically for communications to be relatively inexpensive. Some compromise on operational requirements may be needed from each



Rolls-Royce-Turbomeca. AFVG will be powered by two M45G engines, to be made by the Bristol Siddeley Division of Rolls-Royce and SNECMA in France.

Before discussing the performance of these new aircraft, it is well to consider the broader aspects of such co-operative programmes. The benefits are clear. Two countries share the research and development bill, and likely production quantities are doubled, thus realising the full economies of large scale production. The

partner to accommodate important features, but in practice this has not been serious on Jaguar, and on the AFVG the divergent primary roles are readily met because of the variable geometry feature. To quote the AFVG project manager at BAC: 'The basic merit of variable sweep is that it transforms an aeroplane on demand from a low speed, high aspect ratio "airliner configuration", with efficient cruising characteristics and docile take-off and landing, into a highly swept,

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supersonic configuration with low gust response for high speed flight at high or low level.

Compromising on operational requirements is not without advantage in making the resultant aircraft more attractive to other customers. Jaguar provides an excellent illustration of an aircraft which appeals to many of the world's air forces. Market studies made during the design stage show that some 5,000 aircraft are operating in the Jaguar roles in about 70 of the world's air forces, quite apart from the Eastern Bloc, the United States, France or Great Britain. It will be available at the right time, at the right price and with the right performance. The time is 1970: price is directly related to aircraft weight, and at a normal take-off weight of about 21,000 lb, this too, will be right. With a large fuel capacity, the external store positions are left free for a weapon payload on most missions. On internal fuel alone, and flying in an all-low sortie out to the target and back at transonic speeds, Jaguar can hit a target at a distance of well over 300 nautical miles. The ferry range at medium altitude and economic speed is around 2,500 n.m.

The static thrust of both Rolls-Royce-Turbomeca *Adour* engines is about 8,800 lb, plus an extra 50 per cent with re-heat, a remarkable thrust-to-weight ratio which brings the Jaguar take-off performance near to true STOL operation. Thus it will be possible to operate from Tactical Strips of well under 3,000 metres, even with large weapon loads. Take-off and landing are

assisted by high lift devices, and low pressure tyres give Jaguar a first-class rough terrain capability, since operation from grass surfaces was called for in the design specification.

A feature contributing to the high cost-effectiveness of this aircraft is its twin engine installation, which naturally provides much higher pilot safety. Studies of aircraft operating under both war and peace conditions show that twin-engined machines have a far better chance of survival in the face of enemy fire or other causes of engine failure; over the whole service life-span of an aircraft like Jaguar, the economic benefits are decisive. Planned to fly for the first time in March 68, the prototypes are now well advanced at the Breguet and BAC factories, where Breguet will make all the front and fuselage centre sections and BAC the rear fuselages and wings. The first aircraft will be assembled and flown in France, but prototype phase flight testing will be done both in England and France according to the nature of the tests and the variant under test, of which there are five: A—French tactical support aircraft, B—British advanced trainer, E—French advanced trainer, M—French naval aircraft, S—British tactical support aircraft. The trainers are tandem two-seaters, and are slightly longer than their single-seat tactical counterparts, but both the basic types have a full weapons capability, while the French naval aircraft is single seat and incorporates carrier-landing and take-off equipment.

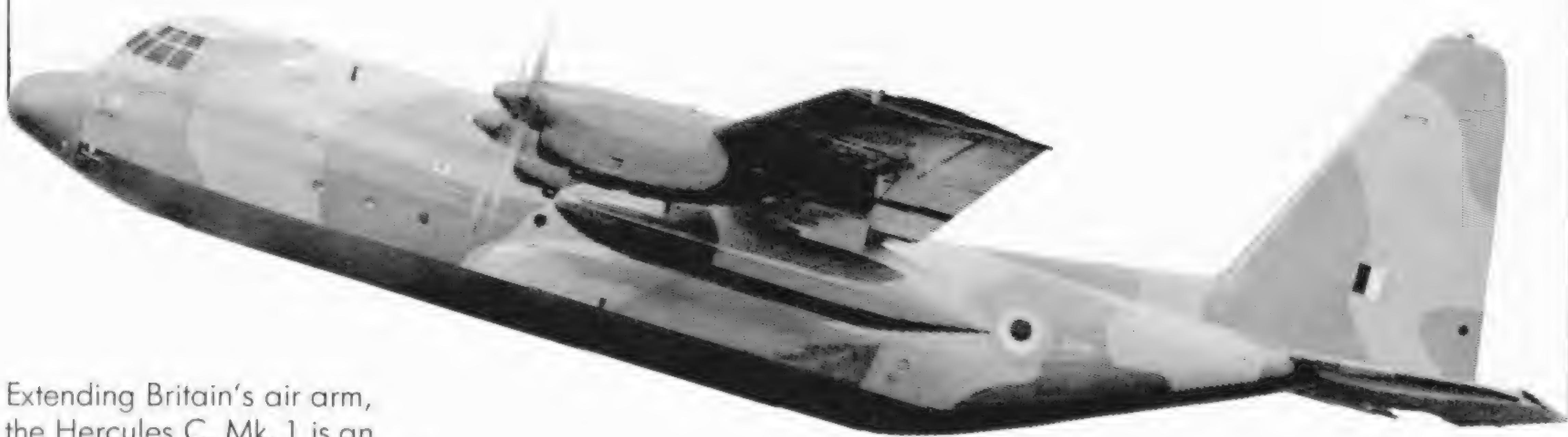


Left: Model at Paris Air Show



By comparison with Jaguar, details of the AFVG are shrouded in a security screen, although a few facts are now available. It will also have two engines, and carry a crew of two in tandem. Its weight will be about half that of the F-111, with consequently shorter range of operation, and together, these aircraft will cover the future strike needs of the Royal Air Force. Like the F-111, AFVG will also employ variable geometry wings, using principles established by Dr Barnes Wallis of BAC over 15 years ago. The AFVG element of the strike force will naturally be particularly appropriate to European operations, since it was conceived to meet the joint requirements of two leading European countries. Strong overseas interest has raised the possibility of third country participation in the development programme. Using the management principles worked out on Concorde and Jaguar, other partners could advantageously be accommodated and strengthen the project still further. ©

More muscle for the RAF



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PINK'S WAR

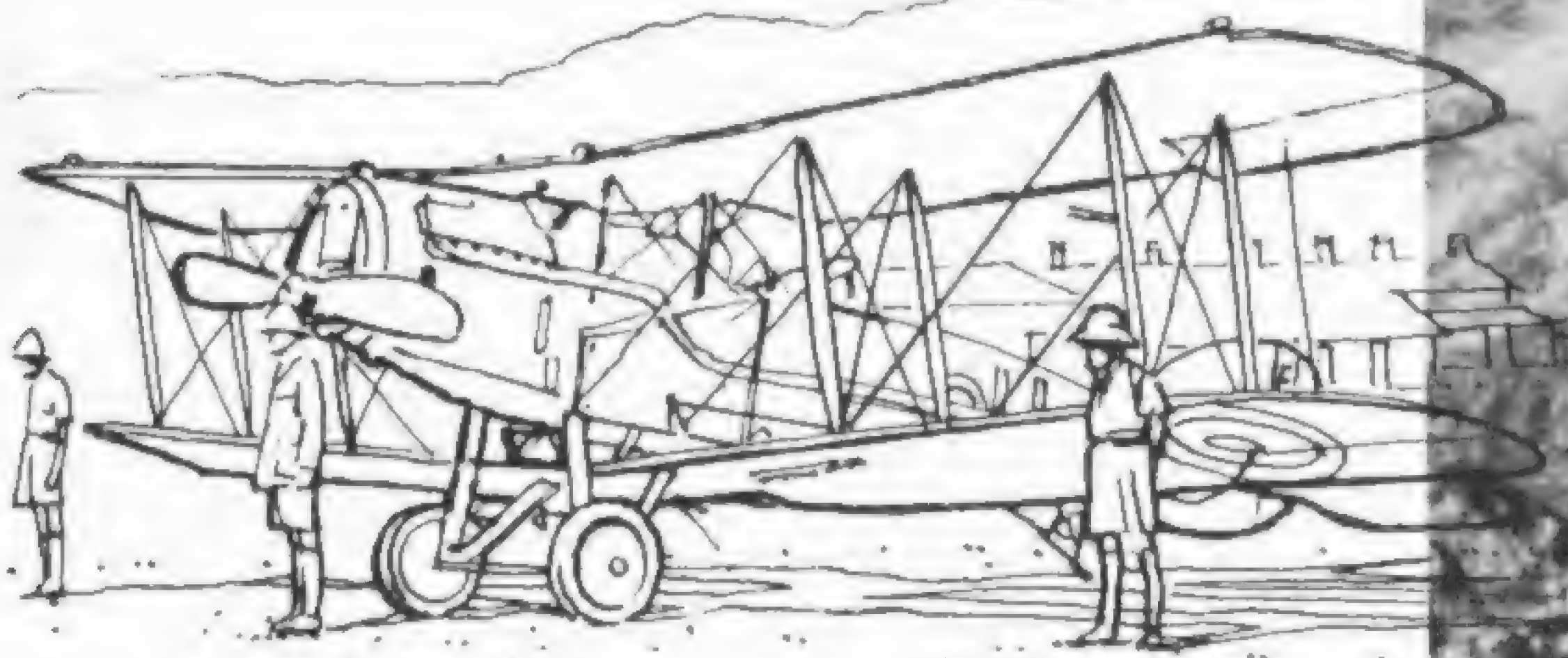
another authentic
tale of the RAF on
the North-West Frontier
by F E Chasemore

The photographs illustrating this article were supplied by C-in-C Pakistan Air Force in conjunction with their Condensed History (p 39)

IN March 1925 No 5 Sqn moved from Kohat to a delectable spot called Tonk, a mile or so from the Waziristan hills; a walled city bearing all the hallmarks of periodical lootings by tribesmen, some mutti huts for the unfortunate troops sent up from time to time, and rating high in the world's top ten for temperature. Our old friends the Mahsuds had been causing trouble again (a pastime at which they were so expert they made most other Frontier tribesmen look like schoolboys!) and this time on such a scale as to stretch the usual few days 'ops' into a six-week war named later for the 'Poetical Wingco'. At a time when laughs were hard to come by, a revised version of his verse was going the rounds in no time and did the squadron's morale a power of good. (Regrettably, it is quite unfit for publication—*Editor*.) This was the first time the RAF had ever handled a major Frontier disturbance independently of the Army and when it was over somebody found some surplus Indian General Service Medals lying around and gave us all one each, complete with a nice new clasp *Waziristan 1925*. And as only two squadrons—5 and 60—took part, it must be quite a collector's piece.

As air photographers, the first thing Chinwag and I had to do on arrival was to turn down the CO's kind offer of a sandbagged dugout for use as a darkroom. Chinwag said it smelt of dead bodies, but we found a disused wash-house in the Dogras' lines, which at least had a *live* smell—though for how long was a matter of doubt, ventilation being non-existent and five minutes the limit of human endurance under working conditions. We christened it *The Black Hole of Tonk*. Plate and print washing had to be done under the taps where the Dogras watered their mules, and edging our way between these reluctant movers became one of the high-spots of a pretty grim six weeks, throughout which a scorching wind blew straight out of a funnel in the hills with all the qualities of a blow-lamp and dried us up until we looked like bits of very old leather. Day or

O smart Brisfit, O smart Brisfit,
 What are you doing in fighting kit?
 I'm praying hard I'll avoid a conk
 On offensive patrols from a sink called Tank.
 Up the gorges and down Spli Toi,
 Sniped at like hell - but attaboy!
 They called it war on the banks of the Marne,
 But, bless you, it's peace in Waziristan.



night the temperature hardly ever dropped below 120, yet we scarcely perspired in that dry blast and heat exhaustion was added to the normal frontier routine of fever and prickly heat.

Nights were long battles for sleep; the solitary sheet soaked with a bucket of water would be stiff as a board in ten minutes—and hot as hell. Our huts were next to the cemetery and a mile from the 'drome, and it was advisable not to miss the lorry; when it came to hoofing it, it was a very long hot mile indeed—especially if you were humping photographic gear. They fed us on curried mystery, fried eggs and tinned sausages, all washed down by lashings of tea, but the last raid of the day took along a few bottles of beer and hung them out to cool on the way back, which made them drinkable for a good five minutes after landing. There was a chronic shortage of ice.

The villages and caves were bombed and gunned every day and all day, our Biffs from Tonk alternating with 60's Nine Acks from Miranshah. Life was one long round of refuelling and bombing-up, with everybody mucking in; it wasn't very long before the armourers and ground crews were practically worked to a standstill and then everybody became over-fatigued and the sickness rate soared. The targets were photographed every other day and Chinwag and I took it in turns. It was mostly dull, unexciting stuff from 3,000 ft and when close-ups were needed Chinwag bit his nails in vexation—but that was his own fault for specialising in the high stuff. In the evening we would amble over to the Political Agent's place with the day's results, to be rewarded with an iced drink: after an hour or two in the Black Hole it was manna from Heaven.

Prendy

I mostly flew with Prendy, a class pilot. Our bombing was up to the usual standard—for every hit, four would slide down the side of the scenery and make a few more



dents in a landscape already full of them. Nobody was supposed to bring any ammo back and thanks to the Lewis's happy knack of jamming every few rounds quite a few pans were emptied over the side! When close-ups were wanted Prendy and I used to stay aloft while the Flight got rid of its bombs and finished its gunnery practice—then we would peel off and get down to work. When more bombs began to burst close by, we'd know the Nine Acks had taken over and it was time to knock off.

I was fortunate in having Prendy; there was an affinity between him and a Bristol Fighter. Everything he did had the polish of a master, whether he was putting you on the top of a tower for an intimate view of the village's innards or going round the bend of a gorge in a steep turn. He was also one of the few who could fly really straight and level. His stunting was effortless and superb; he could play tunes on the wires in a stall turn—the Biff might have been a violin as she slid over into that exhilarating dive with a crescendo that made the heavens ring. I can still hear the music across the years. So, I suspect, can Prendy—though his hours in this world ended when he was killed flying for Imperial Airways in Australia.

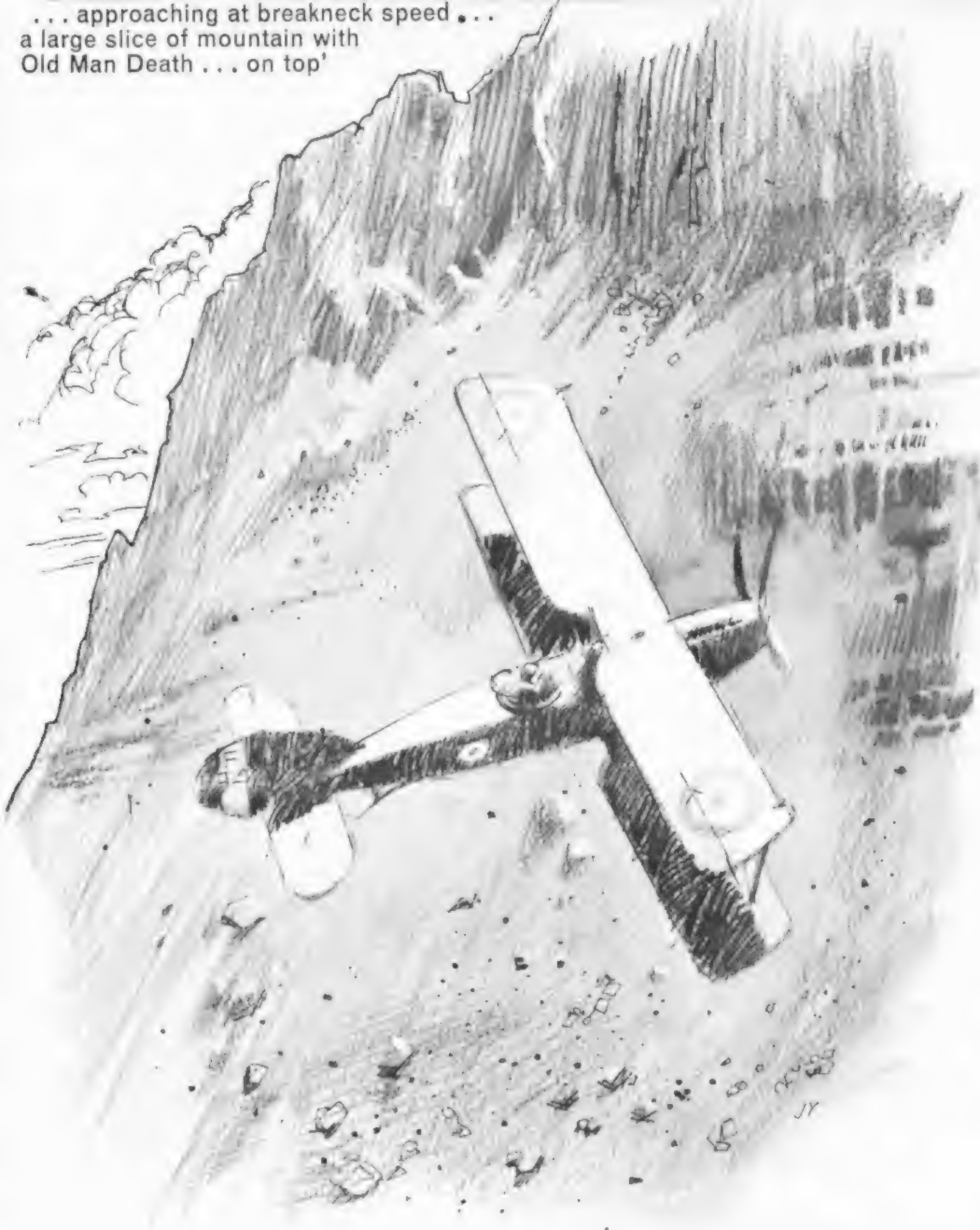
One late afternoon we were given half an hour to

Bristol Fighter, the 'Brisfit' or 'Biff' of the story, over Khyber in 1925

Bristol Fighters at Peshawar in 1929



... approaching at breakneck speed ...
a large slice of mountain with
Old Man Death ... on top'



clean up and get on parade, a unique event at Tonk. A Nine Ack had crashed and a body had been brought in for burial. Funerals were just another parade for us and interest usually centred around avoiding getting roped in as a pall-bearer or as a member of the firing party. For while there is little to learn about coffin-carrying, the intricacies of the rifle movements are baffling in the extreme and not conducive to a sympathetic attitude to the deceased—for all the bowed heads. But this one was different. Perhaps we were just dog tired, or maybe it was the Dogra pipe band wailing 'The Flowers of the Forest'. But our customary cynical attitude to such RAF occasions was absent for once.

Dashwood

Poor old Dashwood didn't get the smart turnout his behaviour during his last hours deserved. The trailer that carried him on that last dusty journey lacked its

usual paint and polish, while the Union Jack which covered him was, like his escort, worn and frayed at the edges: all we had to offer was polished shoes and freshly-shaven chins. Yet that scene sticks in my memory ... more than others having all the drilled and polished movements normally inseparable from the one occasion when the Service does you proud ... the lament of the pipes, the blood-red sun sinking behind the jagged hills as the last raid of the day dipped its wings overhead, the funeral service being read by an erect, gaunt-looking CO, the round faces of the Dogras and the contrast of their immaculate turn-out with that of the drawn, tired squadron; and then the two bearded Mahsuds—our enemies—who had been with Dashwood in his last hour and had insisted on staying with him to his journey's end out of respect for a brave man.

And now we've buried him, let's say something about this man who, in his last hours, joined the select little band whose conduct did more to hold the Frontier than all the bombs and guns, for *they* never bothered a Pathan yet. Some of us knew Dashwood from Dardoni days when 60 had lent us a couple of Nine Acks to speed up the air survey of Waziristan because of their longer endurance. A quiet, rather reticent type, we had christened him Juldi Lakri—our idea of translating his name into Hindustani. There was nothing heroic about him—except his ending. The Nine Ack had piled up outside one of the hostile villages about mid-day and burst into flames after the manner of its kind. Its bombs had gone but it had enough ammo left to provide enough fireworks to keep the tribesmen at a distance, whence they had watched Juldi go back into the flames for the man in the back. They couldn't see what went on in that inferno, but they could hear the screams; and as they died away Juldi came crawling towards them—burnt from the waist down. They gave him water. Then he got to his feet and started to walk to Sorarogha Fort. Of course, they could have slit his throat (and spared his agony), but instead they let him go and gave him an armed escort to ensure that nobody mucked him about on the way. I cannot begin to imagine the torture of the seven-mile trek along hot, stony mountain tracks on burnt stumps; the only man who really knew came to the end of it just outside Sorarogha. He sent in one of his escort with a message; it was written in blood with his finger and it read: 'Send brandy, for God's sake'. When they brought it to him he flogged his dying spirit along that last desperate stretch, and there he died on his feet to a salute from his enemies. Whatever else may be said about them they knew a man when they saw one.

Later, when his tribal escort found he was being sent down to Tonk to be buried they *all* insisted on going

De Havilland 9-As ('Nine Acks') at Miranshah, 1925



with him—in one Tin Lizzie! Finally the Political Agent settled for two, selecting them by the ancient infidel custom of drawing from a hat. The others were allowed to return to their homes to be bombed, but next day they brought in what was left of the other body. It arrived in a very small sack and was so light that we found the coffin difficult to carry—it tended to hop about on our shoulders.

Bhusti

The only other excitement which broke up the endless monotony of overwork in the scorching heat, dust and flies concerned Bhusti, our only Gurkha pilot. But he was luckier than Dashwood and got away with it. It happened when we were 3,000 ft up over the Shahur Tangi, a 1,000 ft gorge, when we ran into the father of all air pockets and dropped a good couple of thousand before he pulled out just a few feet above the rocks. And approaching at breakneck speed was a large slice of mountain with Old Man Death perched invitingly on top; but the Gurkhas' gift to the Squadron threw the old girl over into a snappy turn which would have put those Hendon chaps out of business, and Bhusti lived to bomb the tribes another day. Again and again, Mother's favourite son would recount the epic without the slightest regard for voracity or anything else likely to cramp his style. Each version was funnier than the last and helped to keep us going during the

last two wilting weeks. Whenever we got broody we thought of Bhusti.

At the end of the sixth week, when flying and shivering and scratching and yawning and eating and drinking all seemed merged in a timeless miasma fanned by the ceaseless blast of the 'Tonk Zephyr', through which by now we were stumbling like bleary-eyed automatons, came the order to move to Miran Shah, just as the last raid of the day was coming in to land. It gave us exactly ten hours to pack up, so we just worked all night at packing and loading, and when dawn came we were all fast asleep on top of the lorries, like limpets clinging to the rocks after the tide has gone out. But sleep ended when the sun began to get to work on our arms and legs—from then on it was a case of turning every few minutes—and so across the frying-pan to Bannu.

At the rest camp we stood beneath the showers and gasped delightedly as the water gouged the dust out of the cracks in our blackened skins. It was agony—but wonderful! And so to bed for the first real sleep for weeks. As to who won the war . . . the opposition had lost a camel and 60 Sqn a couple of good men, but it was the Mahsuds who first called 'Enough!' . . . the fleas had finally driven them out of the bomb-proof caves where they had spent their days laying odds on whose tower would catch the next direct hit. No doubt they patched up a temporary truce with the Political Agent and immediately started plotting more mischief. But Pink's War was over. ○



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THE INDIAN AIR FORCE

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It is little known even in the Indian Air Force that in December 1913 an Indian Central Flying School was established at Sitapur, Uttar Pradesh, with four air-planes costing Rs 15,000/- each. Its Commandant, Capt S D Massey of the 29th Punjab Regt, reported direct to Army Headquarters; its purpose was to give flying experience 'under Indian conditions' to selected British officers of the Army.

During World War I the Indian Government was most concerned about the unquiet on the North-West Frontier. With Czarist Russia in the background, Afghanistan and the frontier tribesmen could be up to all kinds of mischief. Thus India got her latest military weapon—one Flight of No 31 Sqn of the Royal Flying Corps at Risalpur, with an Aircraft Park at Lahore—in December 1915. Since flying was a complicated business, the C-in-C appointed an adviser, Maj G M Griffith of the Royal Artillery, and later of the RFC, but since the flying service was still a poor relation, the Major was posted to the Ordnance Branch at Army HQ as Assistant Director of Aeronautics. By September 1917 the approved strength of the RFC in India

An Excursion into History by Air Chief Marshal Arjan Singh D.F.C. Chief of the Indian Air Staff

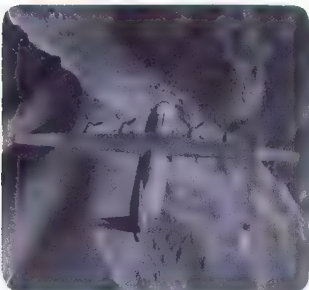


was one Aircraft Park, No 31 Sqn comprising an HQ and three Flights, No 114 Sqn with an HQ and two Flights and half the Aden Flight. The OC 31 Sqn was in practice the Chief of the Air Force in India, and he had a very rough time of it. His Flights were dispersed all over the North-West Frontier and he could hardly keep in touch with his forces. But his most serious problem was communicating with the General Officers Commanding Divisions and Army HQ, for he was a junior officer cast in a very senior role.

The Royal Air Force in India

On 1st April 1918 the Royal Air Force was born out of a merger of the RFC and RNAS, and sanction eventually came for the posts of a Wing Commander and a Director of Aeronautics. By 1919 the strength of the RAF in India was 33 BE 2Es and BE 2Cs operated by 69 officers and 345 other ranks, and until the Afghan War of 1919 it was thought that four squadrons of 18

aircraft each were enough for India's needs. But the experience of that war and the performance of these few little aircraft brought altogether new solutions to the old military problems of the Empire. The frontier belt covered an area of 30,000 square miles. It became evident that a self-sufficient air force could keep in check the turbulent tribesmen and release hundreds of troops for useful work elsewhere; it could also shorten the war and save many lives and much money. On 8th September 1919 Sir W G H Salmond, Commander, RAF Middle East (which then included India), submitted his report; on 15th February 1920 the RAF in India was to be placed on an independent, strong footing, reporting directly to the Air Ministry in London, but Salmond's reorganisation could not be carried out because of a cut in the Defence Budget for 1922-23, and due to lack of personnel and equipment the Air Force in India became practically non-existent



Top L The late A-M Mukherjee as a PO with his Wapiti *Top R* Casualty evacuation by IAF Mi-4s in NEFA in 62 *2nd Row L* IAF Mi-4 in the Rann of Kutch in April 65 *R A* game of Ladakhi polo at Leh *3rd Row L A* sick jawan being helped on board an IAF Dakota for evacuating to base *R* Late Prime Minister Shri Nehru talking to airmen at Leh in 62 *Left* Transport over the hill country

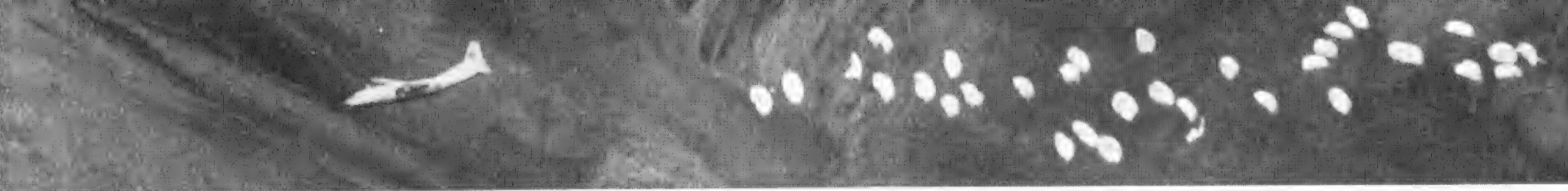
as a fighting force, much to the alarm of the Air Council. In September 1922 Salmond again reported on the use on an air arm in India; with the Government's approval the RAF in India was to be commanded by an Air Vice-Marshal with direct access to the Viceroy. There were to be six fully fledged squadrons with the promise of two more as the permanent peace-time strength of the Air Force in India.

In autumn 1926 the Indian Sandhurst (Skeen) Committee was set up under Sir Andrew Skeen with Moti Lal Nehru and M A Jinnah among its members. It recommended the King's Commission for Indian youth after their training at the Royal Military Academy, Woolwich, and the Royal Air Force College, Cranwell, and a proposal to form a new Service, the Indian Air Force, soon followed. And so the first batch of six Indian cadets, H C Sircar, S Mukerjee, A B Awan, Bhupendra Singh, Amarjit Singh and J N Tandon, left for the course at Cranwell in September 1930. Aspy Engineer joined them a few months later, but Tandon had to drop out of the pilot's course because his legs would not reach the rudderbar despite all possible adjustments; he became an equipper. Other cadets from India soon followed the first batch—Majumdar (who won the DFC & Bar), Runganadan, Narendra, 'Bulbul' Khan, Ravinder Singh, Goyal, Mehar Singh DSO, MVC, Prithpal Singh and myself.

The Indian Air Force

In 1932 the Indian Air Force Act, making the IAF a separate service, was passed by the Legislative Assembly in Delhi. The Air Force had come to stay. A new idea, a revolutionary decision, and the superb spirit of adventure of a few young men, their hopes and dreams wrapped round four very frail aircraft—such were the beginnings of the IAF: on 1st April 1933 the IAF started at Karachi with a flight of four Wapitis. For the next three years the pilots concentrated on training—rising early, flying hard, with long hours on the parade square and at morse and target practice. Most people wished them well, but many had serious doubts about the capabilities of the few who had set their hearts on flying. The years between 1936 and 1939 saw the IAF on operations over the North-West Frontier—a rugged, forbidding country inhabited by ruthless tribesmen; in case of mishap survival was nothing short of a miracle. Flying conditions were difficult and aggravated by having to take-off and land in the rarefied air at 7,000 ft with underpowered aircraft.





So far the IAF's progress had been painfully slow; funds, technicians, equipment, aircraft and weapons, everything—except the enthusiasm of its pilots—was in short supply. Then came World War II, and the accent shifted from the mountain frontier to the vast expanses of the Indian Ocean and the jungles of Burma.

World War II

In the winter of 1939, five Volunteer Reserve Flights of the IAF were raised at Karachi, Bombay, Cochin, Madras and Calcutta, manned by 'locals' from their own towns and including a number of Englishmen who were also 'local' in business or profession. Between 1939 and 1942, when these Coast Defence Flights were wound up, they flew unceasingly in obsolete aircraft and in all weathers along India's colossal coastline. These young men of India and England experienced thrills and despair and misfortune as they lived and worked side by side and shared unforgettable impressions. From the mountains to the seas, and then yet another destination—the jungles of Burma: the Japanese had broken through with a superior force and war was staring India in the face. The outlook was grim, with the prospect of a hopeless struggle. On 1st February 1942 No 1 Sqn IAF went to war at Toungoo in 12 Lysanders, and was promptly welcomed with two Japanese air raids that very day. Lysanders were army-co-operation aircraft, slow enough to hang around; that is how their makers described them. But 1 Sqn decided otherwise—the enemy raids had to be answered. They were fitted with two 250lb bomb racks within 24 hours and set out for the Japanese air bases in Siam next day. In 41 bomber sorties the squadron lost only one aircraft. Lysanders would have stood no chance against the Japanese Zero fighters but for the hard-earned skill of their pilots' frontier years which enabled them to get away. The ground staff was up to scratch as well; they produced wooden tail wheels and fitted motor lorry tubes in aircraft tyres, as these items were 'Command inability'! But the Japanese were in a winning mood and the Allied Forces had to take, in the words of General Stilwell, 'the hell of a beating'. It was as well that the last battle for air superiority was fought over Rangoon on 24/25th February 1942, just before complete evacuation. In that battle the Japanese Air Forces were badly mauled; otherwise they would have played havoc with the retreating Allied Forces. No 1 Sqn's story is germinal to the history of the IAF. Majumdar DFC, Rajaram DFC and the writer have had the privilege of commanding this squadron. It was on operations for 14 months during which 4,813 sorties were flown, ten lives lost and nine DFCs earned.

The Secretary to the Government of India wrote in his report in January 1945:

The IAF has increased from a tiny force of 200 officers

and men to a total force which, including the RAF substitution element, now numbers over 27,000 officers and men . . . The Indian Air Force has now seen service against the enemy and proved itself in battle. Of its nine squadrons, six are now fighting the Japanese in Burma and two are engaged on watch and ward duties on the North-West Frontier.'

and he wrote of the fine tributes paid to the IAF.

Field Marshal Slim:

'We would still have been blind in this dense, hilly country to movements of the enemy had it not been for the eyes of the Indian Air Force.'

The Allied Air C-in-C, ACM Sir Richard Peirse:

'I have watched you grow and I have seen you fight. You have won your spurs, and the respect and confidence of all of us. These achievements have not been won without sacrifice.'

This giant effort of a small air force received its due on 12th March 1945:

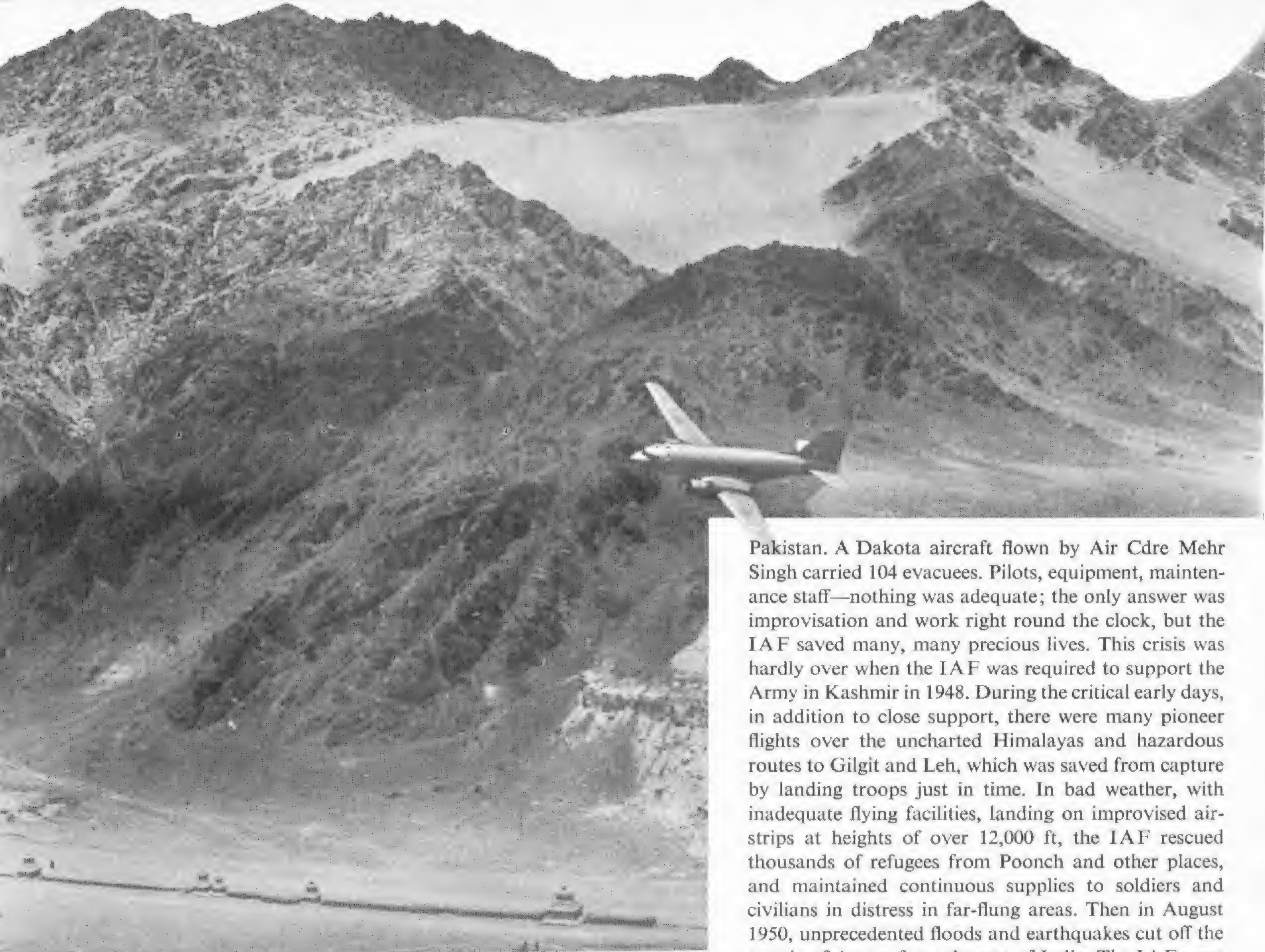
'His Majesty the King has been graciously pleased to approve that in future the designation of "Royal" shall be prefixed to the Indian Air Force, which will henceforth be designated "The Royal Indian Air Force".'

The consequences of Partition

Then in 1947 came the partition of the country with its inevitable consequences. India was allocated seven fighter and one transport squadrons equipped with Hurricanes, Spitfires, Tempest fighter/bombers and C-47 transports. The RIAF became an independent service with its own C-in-C, and an HQ Staff built up more or less on Air Ministry lines—Air Staff, Personnel and Organisation, and Technical and Supply, each Branch under a Principal Staff Officer. RIAF units were, in the main, organised into two Groups—Operational and Training. This was not just reorganisation, it was more like beginning all over again. Before the IAF could take effective steps for its own rehabilitation it was called upon to help in evacuating the refugees from

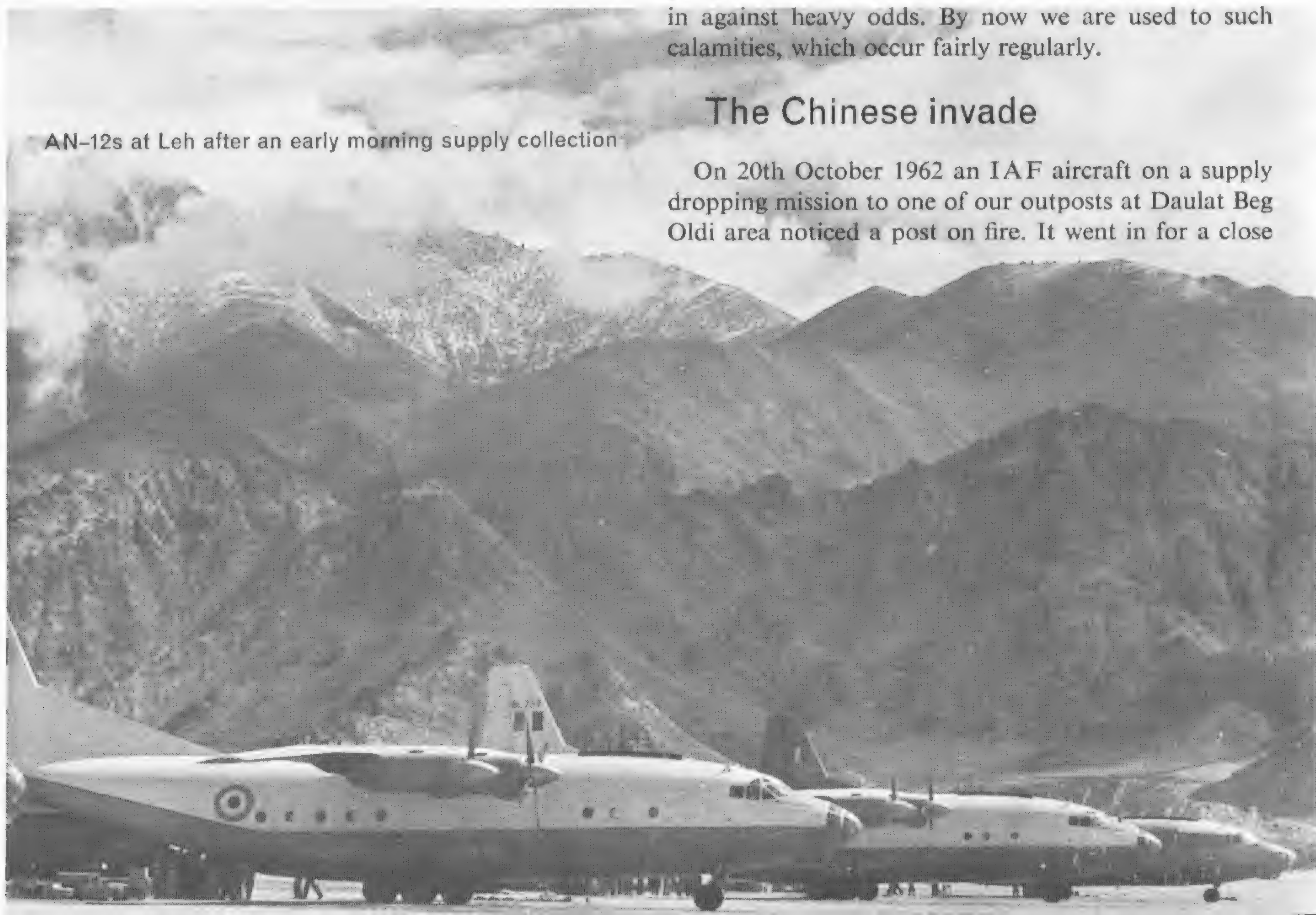


A supply drop at Senga dropping zone in NEFA in 1962



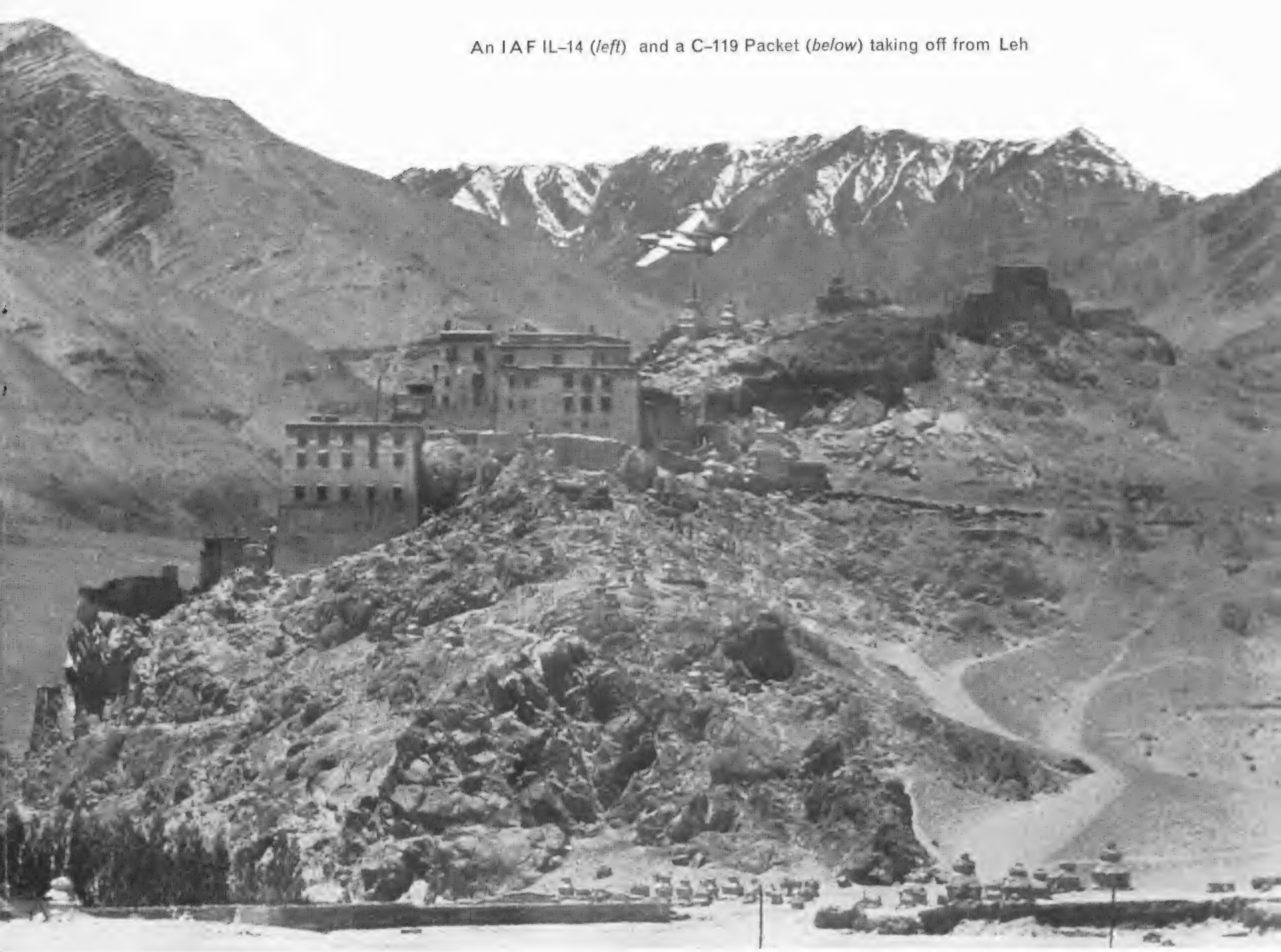
Pakistan. A Dakota aircraft flown by Air Cdre Mehr Singh carried 104 evacuees. Pilots, equipment, maintenance staff—nothing was adequate; the only answer was improvisation and work right round the clock, but the IAF saved many, many precious lives. This crisis was hardly over when the IAF was required to support the Army in Kashmir in 1948. During the critical early days, in addition to close support, there were many pioneer flights over the uncharted Himalayas and hazardous routes to Gilgit and Leh, which was saved from capture by landing troops just in time. In bad weather, with inadequate flying facilities, landing on improvised airstrips at heights of over 12,000 ft, the IAF rescued thousands of refugees from Poonch and other places, and maintained continuous supplies to soldiers and civilians in distress in far-flung areas. Then in August 1950, unprecedented floods and earthquakes cut off the people of Assam from the rest of India. The IAF went in against heavy odds. By now we are used to such calamities, which occur fairly regularly.

AN-12s at Leh after an early morning supply collection



The Chinese invade

On 20th October 1962 an IAF aircraft on a supply dropping mission to one of our outposts at Daulat Beg Oldi area noticed a post on fire. It went in for a close



look and came back with bullet holes. The Chinese had come and the IAF was at war again. During this operation our helicopters also did magnificent work; flying in bad weather at over 15,000 ft, they carried troops, guns, ammunition, evacuated casualties and brought back prisoners of war. Only those who have personal experience of the Himalayan terrain, its unpredictable weather and violent air currents, can realise the difficult conditions under which those operations were carried out. A democracy is rarely prepared to meet a sudden military challenge, and India was no exception when China attacked in 1962. But this was not to be repeated when Pakistan attacked in August 1965. Through CENTO and SEATO Pacts, Pakistan had acquired superior weapons and equipment, built solid defences above and under ground and her well-trained Armed Forces were apparently ready for the prize. But it did not work out as planned: the Indian Air Force stood in the way. The IAF went into action just a few minutes before sunset on 1st September, and in the twenty-one days that followed, it brought us many a pleasant surprise; dealing with F-86s and F-104s armed with Sidewinder missiles, our somewhat con-

ventional Gnats and Hunters proved their worth time and again.

The Indian Air Force today

Today the IAF is organised into Training, Maintenance and three Operational Commands. Aircraft for the IAF are also being produced in close co-operation with the Air Force—HF-24s and MiGs are on the production line, as well as a variety of essential technical equipment. Then we have a fair range of aircraft from different countries—Hunters, Mysteres, AN-12s, and Gnats, to mention a few, a variety which is very much the spice of our Air Force; it gives us many headaches but also many advantages. In many ways the IAF is a unique service. It comprises people from all parts of our vast country, people who speak as many as fourteen different languages, profess seven religious faiths, have different cultural backgrounds—yet who all live and eat together in the same Mess, and who work and fight together in a common cause—to safeguard the frontiers of India and ensure the freedom of her skies.

◎

THE ROYAL AIR FORCE BENEVOLENT FUND

(For the help of all ranks in memory of those who died serving)

Head Office:

67 PORTLAND PLACE W1

Telephone: **LANGHAM 8343-7**

(Registered under the War Charities Act 1940 and the Charities Act 1960)

Patron: HER MAJESTY THE QUEEN

President

HRH PRINCESS MARINA DUCHESS OF KENT

Chairman of Council:

Harald Peake Esq

THE ROYAL AIR FORCE BENEVOLENT FUND was founded in October 1919 by the late Viscount Trenchard to secure lasting benefits for the personnel of the Flying Services and their dependants in commemoration of their achievements during the Great War 1914-18.

A Memorial to the Officers and Men who lost their lives stands on Victoria Embankment overlooking the Thames, and was unveiled by HRH the Prince of Wales in July 1923. An inscription, in remembrance of those men and women of the Air Forces of every part of the British Commonwealth and Empire who gave their lives in the 1939-45 war was unveiled by Marshal of the Royal Air Force Viscount Trenchard at a ceremony on 15th September 1946.

The fund exists for the relief of "distress" or need, actual or potential, among past and present members of the Royal Air Force, Royal Auxiliary Air Force, Royal Air Force Reserves, Women's Royal Air Force—and their dependants. It must, therefore, be prepared to help:—

The disabled, and the dependants of those killed flying

**Other casualties and their dependants
Sufferers on account of sickness and general distress**

Expenditure on all forms of relief in 1965 amounted to £859,392. In the first year of the fund's existence, 1919-20, it is noteworthy that the help given amounted to £919 and since then a total of over £13 million has been disbursed on all forms of assistance. Of this amount over £12 million has been expended since VJ Day 1945.

The Royal Air Force Benevolent Fund exists for a Service that trains as well as fights in the air, and provides relief for cases arising from casualties in war as well as from flying accidents and ordinary distress in peace. It must therefore be prepared to render help indefinitely.

The Council trust therefore that the Service and general public will respond generously and unremittingly to their appeal and so enable the fund to continue its increasingly valuable work.

How to send Help

Cheques etc, which will be gratefully acknowledged, should be made payable to:

**THE RAF BENEVOLENT FUND,
67 PORTLAND PLACE, LONDON W1**

THE ROYAL AIR FORCES ASSOCIATION



Patron: HER MAJESTY THE QUEEN

President:

Marshal of the Royal Air Force

HRH The Duke of Edinburgh

KG, KT, GBE

THE ROYAL AIR FORCES ASSOCIATION is, odd as it may sound, an organisation with two sides. It has on one side a very active and very public social life at its 725 branches throughout the world which can truly be said to support the other side—the quiet and confidential welfare work which is the Association's main purpose.

The enormous scope of the welfare services, available to all who serve with the Royal Air Forces, past and present, can only be mentioned in very general terms. The field of pensions alone is vast and complicated. Advice on legal matters, employment, a thousand other personal matters come within this very comprehensive service. The Association also maintains two convalescent homes at St. Annes-on-Sea and Sussexdown where there is also a home for the badly and permanently disabled—a specialist field where the need is great.

The Association works in the closest possible conjunction with the RAF Benevolent Fund on whose behalf branch honorary welfare officers act as the Fund's representative in local welfare matters.

The RAFA is grateful to share the proceeds of the sale of this Souvenir Book with the Benevolent Fund and wishes to thank you all for your support.

**CENTRAL HEADQUARTERS,
43 GROVE PARK ROAD, LONDON, W.4
CHIswick 8504**



A career for
you in the R.A.F.
See page 34

red arrows

the dedicated **seven**



red arrows

Wing-tip to wing-tip at 450 miles an hour



Arrow formation

3 The Gnat packs enormous power into a small frame. As the Red Arrows themselves say, "You don't so much climb into it as put it on."



1 The Red Arrows' aircraft is the Gnat—one of the fastest operational trainers in the world. Most important, it is also light and fantastically manoeuvrable.

2 Pilot's-eye view. No radar can help here—just superlative skill and judgement.



8 Roulette—one of the most spectacular manoeuvres of all. Closing speed is 800 m.p.h., ending with a last-second breakaway.

9 Another of the men on the ground on whom so much depends.



10 Practised Arrows of standard that is given or main.

Early in 1965, seven instructors of the R.A.F. Central Flying School were formed into the Red Arrows aerobatic team. Together with their leader and team manager, they talked, argued, plotted their manoeuvres on a board—then rehearsed them in the air. For week after week, flying three and four sorties a day, they wheeled, banked and looped about the sky. Gradually, out of skill and dedication, perfection grew. By late spring, the seven men were flying as one. Since then, the Red Arrows have stolen the show at air displays all over Britain, Europe and the Near East.

This year, their performance is more breath-taking than ever.

**A career for
you in the R.A.F.**
see page 34

4 Three of the stars behind the scenes: the Red Arrows take their ground crew team with them wherever they go. Among them are some of the most skilled men in the R.A.F.



Rhombus formation

5 "It's about time I stopped smoking!"



6 Entering a loop, the Red Arrows are travelling at about 400 m.p.h. When they are upside down like this at the top, they have slowed to about 170.



The Red Arrows' leader has to judge his speed and position with perfect precision.

7 The others hold their position by watching him. Everything depends on trust and teamwork.



11

The Red Arrows are fully operational R.A.F. pilots. They are always ready to return to flying instruction or to a front line squadron.



Big T formation

nd though they are, the Red owe their skill to the high of R.A.F. training—training given to everyone who flies R.A.F. aircraft.

A career for you in the R.A.F.

The Red Arrows' display gives you the chance to see for yourself the high standards of training and skill in the R.A.F. You too can have this training . . .



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R.A.F. Careers Information Service (982DV1), Victory House, Kingsway, London, WC2.

Please send me the free illustrated book giving details of R.A.F. ground careers. (Enquiries from U.K. residents only)

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"My Word!"

a World War II story



In the half light of dawn the monsoon rain beat down upon the pierced steel planking of the airstrip. Along each side of the dispersal the Dakota aircraft were lined up, loaded and with engines running. The cargoes were as varied as the men who flew the aircraft: the needs of an army, even when kept down to stark essentials, ensured that the supply staff were in a perpetual state of tired and worried irritation.

The navigator of Dakota KN 315 leaned against a convenient palm on the edge of the dispersal as he awaited his pilot. The red and green navigation lights of the aircraft moving out for early take off were reflected in the wet steel of the strip and awakened nostalgic memories of his local underground station, with the railway signals reflected from the shining lines. Bill Bailey smiled at the thought: that was the only similarity between this low, swampy Ramree Island and his own beloved London half a world away. He shifted his back against the rough palm tree, trying to allay the irritation of the prickly heat. The movement directed the rain collected around the collar of his monsoon cape down his neck and he repeated the motion. The sensation was cool and pleasant in this Turkish Bath atmosphere; after all, his shirt was already soaked with the sweat that emptied itself through the overworked pores.

He wondered where his skipper, Dave Sheridan, was. They had been together at the early briefing but then Dave had wandered off with the Flight Commander. Bill hoped that the pilot would not be long. They were bound for Myingyan with a load of petrol and Myingyan was a busy place. Get there too late and you found yourself stooging around for half an hour, awaiting your turn to land. A half hour in a Dak, with the heat coming at you from the clouds above and the plain

below, was no joke.

A jeep scurried across the dispersal and Dave leapt from the passenger's seat as it pulled up. 'Give us a hand, Bill,' he called, lifting a shapeless bundle from the back of the jeep.

'What is it?' asked Bill as he lifted a similar load. Most of the bulk was in the supply 'chute but there was a light bamboo cradle attached.

'Plonk!' came the succinct answer. 'Coupl'a jars o' hooch for them jokers on Poxo Tong.'

A wireless post had been established on Pauksa Taung. With the land advance now well down the Arakan Coast Pauksa Taung had almost outlived its usefulness but while the party there awaited relief they still had to be supplied.

'What about their rations?' asked the navigator.

'Went yesterday,' replied Dave. 'But there's a Flight Looney up there raising stink about relief.' The vowels were flat and twanging, proclaiming Dave as Australian. 'The old man's sending him a present to keep him sweet.'

Bill groaned: 'Another bloody wait over Myingyan!'

'That's only half yer rotten luck,' came the sympathetic answer. 'Yorky and Snowy in yet?'

'Yes,' replied Bill. 'I don't know how they can stand it in this heat. My back's giving me hell.'

'They got work to do, cobber,' replied his pilot. 'Takes yer mind off it. Come on, let's get going.'

They vaulted into the side hatch. Inside the fuselage were 14 50-gallon drums, eight to starboard and six to port. Dave frowned as he

saw them.

'My bloody oath!' he swore. 'You can't trim the cow properly anyway and look how they've stowed this lot.' Muttering, he led the way into the forward cabin.

The wireless operator looked up as they entered and took off his headphones.

'Hi Dave, Bill. Wireless all O.K.' The vowels were, if possible, even flatter than the pilot's. Snowy Gibbs was from Perth and saw little reason to disguise his Western origin. Rather the reverse, in fact.

'Good—oh!' acknowledged Dave. 'Done the cockpit check, Yorky?'

This was not an evasion of responsibility; Dave would repeat the check himself. But Yorky Braithwaite, ex-Bradford police constable, was the epitome of all that is meant by 'methodical.'

'Aye, skipper,' replied the second pilot. 'You'll find it all right.'

Dave taxied from the dispersal point and awaited his turn in the line of aircraft approaching the single runway. Bill, hanging out of the hatch aft to get the cooling slipstream on his tortured back, was dismayed to see that they were practically the last off. He hoped that the squadron at Akyab up the coast were not also detailed for Myingyan that morning. As Dave halted the Dakota at the end of the single runway Bill returned to the cabin, rechecking the lashings of the load as he went along the fuselage. He slipped into the navigation compartment on the port side.

Snowy leaned across and tapped him on the knee.

'Ten tenths cloud over the Arakan,' he said, shouting to make his voice heard above the engines. 'How're we gonna let down?'

'Aw, there's bound to be a break somewhere,' replied the navigator. 'Anyway, there's always Rebecca.'



Rebecca was the radar aid which enabled the supply aircraft to pinpoint a target in the thick jungle.

'Have you checked it yet?' asked the mistrustful Snowy.

'No,' replied his navigator, 'I haven't checked it. Likewise, I've forgotten my maps. But it doesn't matter because I can't read 'em anyway, even if I knew where we were going.'

Snowy grinned affectionately at him.

'Ain't it a cow!' he observed. 'Just my luck to get a Pommy navigator.'

By this time the Dakota was airborne, circling over the marshy island, gaining height before setting course. Snowy broke open a packet of cigarettes and offered one to his navigator, who shook his head.

'Are you stark, staring benders?' he asked. 'All that gas back there!'

Snowy shrugged.

'When yer gotta go, yer gotta go,' he quoted and flicked his lighter. It needed three attempts before the wick broke into feeble flame and Snowy dragged hastily at the dying spark. But he was not destined to smoke that cigarette. As the smell of tobacco filled the cabin Dave looked back incredulously.

'Put it out, yer daft bastard!' he roared. 'Trying to blow us up?'

Snowy sighed, pinching the cigarette between his fingers.

'Wouldn't it rot yer?' he enquired rhetorically and turned to his set.

Bill moved forward to stand between pilot and second pilot. Already the air was growing cooler and he sighed gratefully, pulling the sweat-soaked shirt away from his body. Dave touched his arm and pointed ahead. Over the Arakan Yomas was a high barrier of cumulus, towering above the nimbus of the monsoon.

'What d'yer reckon to it, Bill?' he asked.

Bill looked at the mass critically.

'Not too bad,' he said finally. 'Plenty of places you can slip through. Look! There's one of ours now.'

A mile or so away and a 1000 ft below a Dakota was skirting the edge of one of the great ramparts of cumulus. Against the great white cloud it was no more than a speck, meaningless and insignificant. Even the irreverent Dave was impressed.

'My word!' he said. It was Australia's greatest compliment. Then he turned in his seat.

'Get back an' keep an eye on Rebecca, Bill. I can't steer a course through this clag. An' tell that screwball Wop to try and raise Poxo Tong.'

Bill nodded and returned to the navigation compartment, imparting the message to Snowy. Then he leaned forward and studied the Rebecca screen intently. A small echo showed among the interference on the trace; it was the beacon at Pauksa Taung. Sixty miles to go but they were well south of track as Dave weaved the machine through the great cloud canyons. The Dakota lurched in the turbulent air and Bill raised his head from the screen and looked towards the wireless compartment. Snowy was periodically working the key and then listening intently. He looked around as Bill tapped him on the shoulder.

'Any joy, Snowy?' asked Bill.

'Naw.' Snowy removed the headphones in disgust. 'Not a gnat's whisper. They're all

jungle happy down there.'

Bill went forward again after a last look at the screen.

'Thirty miles, Dave,' he reported. 'But try and bear port a bit.'

'Got 'em on the radio yet?' asked Dave.

Bill repeated Snowy's comment. Yorky looked round in interest.

'That's queer,' he remarked. 'I heard 'em myself while we were waiting for take off. Is Snowy on the right frequency?'

'Go and check, Yorky,' ordered Dave. 'Snowy won't like it but we oughta make sure.'

As Yorky squeezed past the bulkhead Bill dropped into the second pilot's seat. They were through the cumulus by now and here and there were gaps in the lower cloud layer. The higher peaks of the Arakan Yomas thrust through the stratus like green islands in a white sea. Bill touched his pilot's arm.

'There she is, Dave,' he said. 'Right on the nose. I'll take Snowy and see to the drop. Usual drill?'

Dave nodded: 'Yair. White light, ready. Red light, let 'er go. I'll try and do it in one run.'

Bill slipped out of the second pilot's seat. Yorky had obviously given up the task of trying to raise the ground station, for he was sitting at the navigation table fiddling with the Rebecca controls.

'Come on, my son,' said Bill to Snowy. 'We



have work to do.'

He led the way into the bare fuselage, surprised to find himself shivering in the cool air. At the hatch his first concern was to secure himself to a safety line; a precaution which the 18-year-old Snowy disdained. Then the light 'chutes were attached to the static release lines and they settled down to await the signal. The ground appeared level with the hatch as Dave made a tight turn to port and the white light showed above the cabin door, indicating that Dave was approaching the dropping zone.

Long moments went by as the two awaited the red light. But nothing happened; after the slow run-in, the white light went out and the aircraft commenced a climbing turn to starboard.

'He's ballsed it,' said Snowy. 'Round we go again.'

But this time no light appeared. They made the slow run over the clearing without even the white light showing. As they climbed away for the second time Yorky appeared at the cabin door and motioned them forward.

'Get busy trying to raise them again,' he said to Snowy.

'What gives?' asked Bill, curious.

Yorky shrugged: 'Go and see for yourself,' he said.

Bill slipped into the vacant seat as Dave

began the third run-up.

'Something queer here,' said Dave. 'Not a sign of life but the tents are still there.'

He had throttled back and was flying quite slowly over the clearing. Bill looked intently at the ground ahead: the clearing was deserted. On other occasions the small party at the Station had emerged to greet them, welcoming the sight of somebody from the outer world.

'I don't like it, Dave,' said Bill. 'If they missed you the first time, they'd have been out for the second run. I reckon . . .' He broke off; a sound like gravel falling into an empty can came from the rear of the aircraft.

Without conscious thought Dave thrust the throttles fully forward and swung the Dakota to port in a sharp climbing turn. A howl of protest came from the unfortunate Snowy as he was jerked from his stool against the equipment before him.

Away from the immediate danger, Dave thrust a hand through his hair and looked over his shoulder at the navigator.

'Too close for comfort, cobber,' he said. 'Where d'yer reckon that little lot come from?'

'The Nips for sure,' replied Bill. 'There's a lot of 'em still around in these hills. I reckon that Flight Looey's had his relief all right.'

Dave nodded: 'Poor sod,' he said. Then a thought struck him: 'Cunning bastards, leavin' the beacon on like that!'

Yorky and Snowy had thrust their way to the front, the wireless operator dabbing at a small cut over his left eye.

'Cripes, Dave,' he said plaintively. 'What're yer trying to do to me?'

'Tryin' to stop yer getting a bullet up yer arse,' replied his pilot. 'Didn't you hear that burst hit us?'

Snowy was chastened.

'My word!' he said, awestruck at the thought of actually being under fire. 'My word!'

Bill felt a hysterical desire to laugh. See nature in its stupendous grandeur—'My word!' Get nearly killed—'My word!' Australia's great comment was being overworked on this trip. The prosaic voice of Yorky broke his train of thought.

'I reckon they got a drum or two,' said the second pilot. 'Smell that gas?'

Dave sniffed.

'Jesus!' he said. 'Get back and see.'

Bill and Yorky reached the cabin door at the same time and flung it open. They looked aghast at the interior of the fuselage; it was awash with petrol from the punctured drums. At least ten were spouting petrol: the quick burst of machine-gun fire had done its job only too well.

Dave listened to their quick report grimly.

'OK,' he said. 'Snowy, get a quick report to base and let 'em know what's happened. Tell 'em we're going to try and make Myingyan. Then stay away from that key. One little spark . . .'

Snowy shivered: 'Yair, skip,' he said. 'What about a distress call?'

Dave shook his head.

'Negative,' he said. 'What the hell good would it do us?'

Snowy disappeared back to his key, handling

it as though it were the detonator of some dangerous bomb.

Bill turned to his pilot.

'Be quicker to make for base, Dave,' he said.

'Yair,' agreed Dave. 'But think of all that cumulus. Awful lot o' static around there. No, I reckon we're better off sweating it out this way.'

Yorky intervened.

'We're just about out of the hills now. What about letting down into cloud? The stuff won't vapourise so much when it's out of the sun.'

Dave looked enquiringly at Bill, who nodded.

'Safe enough,' he said. 'I got a pinpoint through that last break. We're halfway to the Irrawaddy by now.'

Dave started to push the stick forward for a slow descent. Suddenly the nose of the aircraft tipped and Dave wrenched the stick back with an oath.

'What the hell's up with it?' he muttered angrily.

Yorky had the answer.

'She's got a belly full of petrol . . .'

'She's got a bellyfull of petrol, sloshing all over the place. The centre of gravity's altering. You'll have to handle her right careful.'

'I wish they hadn't withdrawn the 'chutes,' said Bill. 'I'd take my chance on the jungle.'

'You and me both, cobber!' observed Dave feelingly. The aircraft was by now flying in cloud. 'Bill, get back and nurse that Rebecca of yours. The quicker we're at Myingyan, the better.'

Bill went back and glued his eyes to the blip on the trace that was the beacon at Myingyan. Despite the cloud cover the smell of petrol grew stronger, inflaming their eyes and making each breath a torture. Yorky smashed a hole through the side windows and Bill demolished the astro dome. In that way, some breathable air was forced into the small cabin. Nevertheless, the rear of the compartment was untenable.

The cloud began to grow more broken as they neared the Irrawaddy. With the great river at last beneath them Bill switched off his Rebecca and joined Snowy, leaning between the two pilots, trying to catch a breath untainted with the raw fumes. Snowy's eyes had grown round and his veneer of toughness had slipped, showing the frightened boy beneath. Bill thumped him on the back.

'How's yer rotten luck, sport?' he asked, imitating the Australian twang.

Snowy smiled at him wanly. Beneath them the broad silver stream of the Irrawaddy unwound slowly. Bill began to read the names of the burned-out towns and villages over which they flew: Chauk, Yanagyat, Pakkoku. At Pakkoku the Chindwin flowed into the Irrawaddy; with Myingyan already visible,

tension mounted in the cabin. They had come this far. Now they must make the descent into the fierce heat of the Burmese plain with the petrol in the aircraft vaporising in the furnace. Hundreds of gallons had flooded into the belly and Dave was finding it difficult to hold the Dakota steady. Each small adjustment of trim caused the liquid to flow, altering the centre of gravity continually.

There were no aircraft over Myingyan. Obviously the depot below was aware of their plight. Dave switched to 'Transmit' and called for landing instructions: the reply was unexpected.

'KN 315 from Baker One,' came the metallic, impersonal voice. 'Do not attempt a landing here; repeat, do not attempt a landing here!'

'What the hell d'yer mean?' roared Dave. 'We're sitting in a firework up here.'

A deeper, more personal voice answered them from below.

'Sorry, 315, but you should have thought of this before. Look along the strip.'

Dave looked down from the port window; the reason was plain and he cursed himself for not thinking clearly. All along the strip were stacked the cargoes of thousands of supply flights; ammunition, fuel, food, all the things needed for the army pushing and slogging its way south through the jungle. The voice came through his 'phones again.

'315 from Baker One. There is an earth strip two miles east of here. Suggest you try there. The surface is reasonable. Over.'

Dave hesitated.

'Hello, Baker One. What about the drink?'

'Negative, 315. The river is full of trees. The floods are bringing them down. Recommend you use the earth strip. Over.'

'Roger,' acknowledged Dave gloomily. 'Wilco. Say, what's the temperature down there?'

'Hello, 315. Temperature 95 Fahrenheit.' There was a slight pause . . . then: 'Good luck, 315.'

'Yair,' said Dave. 'Thanks.'

He looked around at his crew. They had all heard. Yorky was chewing rhythmically on a match stalk; Bill was looking tense; Snowy was gripping the back of Yorky's seat, his eyes wide in his white face.

'Let's get it over with,' said Yorky. 'Look! The strip's over there.'

Dave nodded. The circuit he was making would bring them directly into line for the approach.

'You and Snowy get back to the hatch, Bill,' he ordered. 'You oughta stand a chance there. Yorky, ready with the flaps?'

Bill and Snowy took up their positions. In the fuselage the smell hit their eyes and nostrils like a physical impact and they had to grope

This story is a competition entry, but we cannot trace the writer's name and address. Would he please contact the Editor regarding his prize

their way to the hatch. They had removed their shoes to avoid danger of a spark and the raw spirit stung their feet like the flames of hell. At the hatch they hung precariously in the slipstream, savouring the untainted air, retching as the vapour they had swallowed revolted in their stomachs. Dave was on the final approach and they could see the ground rising to meet them. Suddenly they caught a quick glimpse of a fire-tender and an ambulance; Myingyan had done the best they could for them. And then the wheels touched, once, twice, and they were rolling along baked, rutted earth. Here was the point of greatest danger: Bill found himself repeating some long-forgotten childish prayer, idiotically saying the first words over and over again.

It took an eternity for the aircraft to slow: the ground slipped away beneath them, tantalising them with the promise of safety. Before the Dakota had stopped both Bill and Snowy flung themselves from the hatch, going flat to avoid the tailplane. Breathless and bruised, they lay on the red earth, watching the plane as it finally rolled to a stop a hundred yards on. Almost immediately Dave and Yorky sprang from the hatch and ran for the shelter of the brush springing up beside the strip.

But the aircraft did not burn. From a safe distance all four sat and watched as the petrol flowed in a steady stream from its belly.

Snowy, still pale, felt in his breast pocket for the cigarette he had pinched out so long ago.

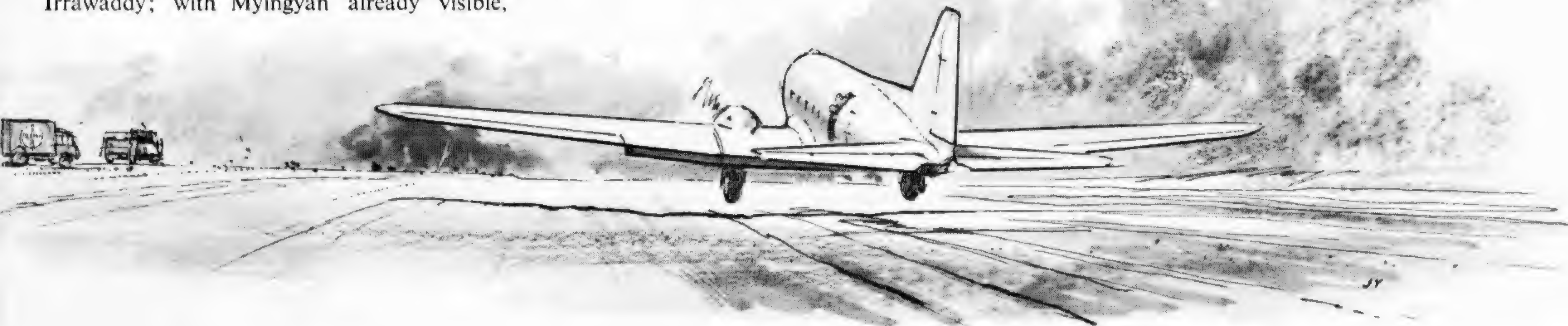
'Cripes!' he said feelingly. 'I need this.' He flicked his lighter again and again but the wick would only smoulder.

'Anyone got a match?' he asked. 'Me lighter's dry.'

Three pairs of eyes regarded him in blank astonishment. And then pilot, second pilot and navigator collapsed, their world dissolving into shrieking, rib-aching, belly-tearing laughter. Snowy looked at his three elders with puzzled asperity. The Pommies were queer all the time but when your own skipper, a fellow Aussie, went crook on you, it was a right cow. He searched his mind for some comment to justify his outraged feelings.

'My word!' he said. 'My word!'

©



Some adverses & badverses by Jimmy MacDonald

A WEE MICKLE O' MUCKLE

Have ye heard of Ian McCatley, the Pride o' Muckleneuk,
Whose reputation lives today in poem, song and book?
Though just a boy in years yet, still his sturdy, muscled frame
Achieved those feats of strength that made illustrious his name.

This heather-treading, porridge-eating, haggis-hunting lad
Was the strongest all-round athlete that Scotland ever had;
In the Gaelic of the Highlands, in the Doric of the South,
The stories of his prowess pass in awe from mouth to mouth.

But the strangest of them all perhaps was when the Queen laid down,
Some urgent state affairs required that she remain in town;
And so the Braemar Highland Games - which really she must see -
Would have to come to Kensington, by special royal decree.

Thus it was one summer's day, from Highland brae and glen,
Hyde Park was filled with pipes and drums and sporran-swinging men;
Young Ian of the Muscles too obeyed the Sovereign's call,
And the proud McCatley tartan kilt was there among them all!

Putting the shot was first event; he held the massive ball
As if it were some baby's toy with hardly weight at all;
A poise, a hop, a twist, a jerk: he hurled it from the line,
And in a perfect curve it soared across the Serpentine!

Throwing the hammer came the next; around his head it spun,
And away he let it rocket like the bullet from a gun;
It just so chanced the midday hour was ringing out just then;
Thirteen o'clock was sounded as the hammer struck Big Ben!

A palace guard of soldiers and a troop of cavalry
Brought into view the caber log - a most tremendous tree;
No other man could lift it, so they called young Ian in;
Who raised it 'gainst his shoulder, tucked in safe beside his chin.

It rose up, up, in awesome height, away above the crowd,
Soaring aloft ginormous with its top lost in a cloud;
McCatley at the bottom end held up the tree with ease,
Though the weight had sunk him in the field up to his brawny knees.

Our Ian trundled forward, as the people watched amazed,
Then with one great almighty heave his massive shoulders raised,
And that fantastic caber lifted up above the park,
Its flight describing gracefully a parabolic arc.

Then down it came, its tapered end forced straight into the ground,
While London's buildings jarred and shook for many miles around;
And raised above them all, of course, was this new slender thing;
From Caber-Tossing Ian, from McCatley's Highland Fling!

The Queen she was delighted and clapped her pretty hands;
The pipes and drums made lots of noise and all the big brass bands;
Our hero lad was knighted, as Sir Ian of the Pole,
With a silk-embroidered haggis and a golden porridge bowl!

And as to that big caber, well, it's left still standing there;
They built a cafe on the top and put around a stair;
It's called 'Post Office Tower', but it's known to the Gael
As 'Ian's Great Big Whopper' or 'McCatley's Tallest Tael'.



THE NEW BROOM

A real living witch called Edwina Kilbride
Flying whizz thro' the skies I have seen;
But in place of a broom the old girl sits astride
An electric floor polish machine.

I've watched her aloft scooting round with the bats;
In and out; twist about in the air;
She favours in place of those comic Welsh hats
A helmet like astronauts wear.

While old-fashioned witches would brew up a spell,
And go crazy with strange incantations,
When Edwina is crossed she will take it quite well -
And mix up your pool permutations.

If your car at the traffic lights just will not budge;
If your tele goes all lines and squiggles;
If any machine seems to bear you a grudge:
Then she's just having one of her giggles.

For we all have to be so efficient these days,
With everything press-buttonomatic;
So Edwina I like, who can find modern ways
To remain just a little erratic

AND EAR IS THE WEATHER FORECAST

Allison Malleson Millicent Twayne
Had an ear that was oddly endowed;
It twitched and it itched to anticipate rain,
And wiggled and wagged for cloud!

In winter, of course, when the climate was bad,
It could be a positive strain,
For the poor little organ vibrated like mad,
Again and again and again!

But the ear was of use if the lady desired
To venture outside for a stroll,
For she always could tell if the weather required
An umbrella or sun parasol.

The man at Air Ministry found it was wise,
Before his prediction each day,
To call her by 'phone so that she might advise
Whatever the ear had to say.

The Allied Invasion lay poised for the strike,
But weather reports weren't clear;
So little Miss Twayne was consulted by Ike -
'A word' so to speak, 'in her ear!'

As you all are aware, the attack went in well,
And Europe was once again free -
All because of an ear that could twiddle and tell
What the state of the weather would be!



GREENFINGERS

A young friend of mine, called Victoria Short,
Is endowed with a gift of a singular sort;
For she has green fingers, which means, as you know
A nack for inducing the flowers to grow.

There are many less lucky, who work the year round,
Out in their gardens preparing the ground;
They use the best methods, they plant the best seeds,
To produce at the finish a harvest of weeds.

But green-fingered people, without fuss or care,
Seem able to grow anything anywhere;
And Victoria Short has been doing just this,
From the time that she was but the tiniest miss.

Her mother recalls how Victoria lay,
Out in the sun with an orange one day;
And up by her pram, where the pips she had thrown,
An orange tree there in the garden had grown.

At school later on, in the class where she sat,
Very much odder things happened than that,
For, out from her desk in the Spring of each year,
A mass of sweet blossoms and buds would appear.

But it could be a nuisance, especially when
A rose-bud might pop from the top of her pen;
And it can be annoying, if adding up sums,
When out of the pencil a pine-needle comes.

As Victoria grows so her powers extend,
And nobody knows where it's all going to end;
She has to wear gloves when she enters a room,
In case all the furniture bursts into bloom.

Wherever her little green fingers she puts,
Quite likely you'll find there some little green shoots;
Her Daddy's delighted at saving so much,
For Mummy needs never buy salads or such.

And now I am told that my young friend has been
Summoned to Westminster Hall by the Queen;
For, so that her gift might achieve the most good,
Victoria's appointed the Minister of Food!

Ian Catley



Victoria Short





THE PAKISTAN AIR FORCE

A Condensed History
by Air Cdre. S. A. YUSAF
formerly Deputy Chief of Air Staff

BEFORE it became the Air Arm of the new Dominion, the PAF was part of the Royal Indian Air Force which had formally come into existence at Drigh Road with a total of four Wapitis on 1st April 1933, the foundations of the Indian Air Force having been laid earlier by the famous Skeen Committee (1926-27) which included amongst its distinguished members the Quaid-i-Azam M A Jinnah, the founder of Pakistan. Air activity in this part of the world, however, dates back to the 20s, when biplanes were first used in support of the Indian army on the North-West Frontier on reconnaissance and bombing missions in a region where land-communications were under continuous attack from the frontier tribesmen. Mainly punitive in purpose, these flights acquainted pilots with the art of flying in a difficult terrain, which was later to serve them in good stead in the hills and jungles of Burma. The aircraft of those days were Wapitis, Harts, Audaxes and Lysanders. The war against the Japanese precipitated a greatly expanded IAF into Burma. It fought with distinction alongside the RAF and AVGs in Hurricanes and some Spitfires and Vultee Vengeances. For the defence of 3,000 miles of Indian coastline, Blenheims and Hudsons joined the Wapitis and Lysanders, operating from places such as Calcutta, Vizagapatam, Madras, Cochin and Bombay. After the war, No 4 IAF Sqn formed part of the British Commonwealth occupation forces in Japan, and some of the pilots who had distinguished themselves in the N-W Frontier as well as the Burmese front of World War II formed the nucleus of the new Service established when Pakistan gained independence in 1947.

Though small and insignificant at birth, the PAF had

behind it all the natural stimulus needed for its development. Air Power in India—first demonstrated in 1919 in the South Waziristan campaign—had been built up by the RAF along the North-West Frontier, inherited later by Pakistan. The prevailing circumstances posed two distinct problems: one was strategic, involving the defence of the Indian Sub-continent by land-routes through which so many invasions had come in the past; the second was created by the unruly tribes that inhabit the mountainous tangle of country on both sides of the external boundary, the *Durand Line*. On the one hand open, level country, rich, fertile and tempting, where the forces of law and order can fairly easily function; on the other hills, barren and difficult of access with innumerable refuges and routes of escape. This was the basis of the 'Frontier Problem' which the PAF inherited. The Air Weapon played a vital role and proved particularly suited to the 'Watch and Ward' tasks on the 700-mile Frontier, enabling the minimum number of regular troops to be locked up in a minor problem. For this was by no means the full extent of the new PAF's responsibilities. An additional 1,400-mile line was now opened up with India, plus another 600 miles of fresh border in Kashmir, as well as the whole of East Pakistan's extensive borders, totally unprotected by air.

Initial problems

The RPAF as it emerged from the turmoil of Pakistan on 14th August 1947 comprised two Fighter Sqs, one Transport Sqn, and single AOP and Comm Flts. Its total serviceable holdings were 28 Tempests, 23 Dakotas, 26 Harvards, 46 Austers and a single Tiger Moth, although seven more were ferried from Jodhpur in India to Pakistan by PAF pilots in September 1947, after a good deal of effort and some quite unusual



Air Marshal M. H. Khan, who became C-in-C of the Pakistan Air Force in July 1955

The PAF is the youngest of the Air Forces whose accounts have so far appeared in this book. On 14th August 1947 for the first time the green-and-white Pakistan ensign with its silver-threaded crescent and star was hoisted on the flagstaffs of five Air Force Stations—Peshawar, Risalpur, Kohat, Chaklala and Lahore

incidents. PAF's full share of defence stores never arrived and maintaining aircraft serviceability was difficult, for men were nearly as scarce as equipment. A positive plan for the PAF had been laid at New Delhi in late 1946 by some 20 far-sighted officers convinced that as a sovereign state Pakistan must have her own armed forces. Without them the unsettled conditions that attended the Partition would have meant chaos. Much could be written of those early days when the country struggled for survival against all odds; the development of the PAF is one aspect of the making of Pakistan. The original numbers who joined the RPAF were 139 GD and 168 other officers, 2,531 men and 309 non-combatant technicians, many from distant corners of India, where their journeys were often very long, uncomfortable and fraught with unexpected difficulties. Twenty-six RAF officers also volunteered from the outset.

Air HQ at Peshawar under AV-M Perry-Keene, called the Air Commander, quickly settled down to the business of operating and developing a practical Air Force. On 15th Sept 46, Flying Training began at Risalpur, but without adequate spares, workshop facilities, refuelling bowsters or even a battery-charging room. Recruits and Technical Training Centres struggled into existence at Drigh Road and a Repair Depot made a start. Our only Equipment Depot was confined to 'unpacking, identification, binning and bringing on charge equipment received as stock transfers'. November 47 recorded 515 tons of equipment received and 60 despatched to units. There was obviously much to do. Pakistan had just come into existence in a cloud of doubts about its stability as a political and economic entity and with little cash to go to world-markets for arms and equipment; nor was it well enough known outside the Commonwealth to open fresh credits. Released air force personnel were invited to rejoin and a purchase mission left for UK towards the end of 1947. Tidying up and making plans absorbed all our energies while the country strived to consolidate its independence.

The Kashmir crisis

Meantime, the Kashmir crisis threatened to engulf all Pakistan, although the armed conflict was localised and the only significant part the PAF played from December was to answer urgent calls for help from the besieged population of Gilgit and the forces of Azad Kashmir, the sole reliable means of keeping the area supplied being by air. Only two Dakotas were available at the start, with crews having no experience of supply-dropping and who had to cross the highest, most difficult and treacherous terrain in the world, with mountains rising from 7-26,000 ft and no weather-

reporting facilities. The Indian Air Force was then operating freely in Kashmir and there were grave risks of fighter interception, but the airlift was intensified as the demands soared despite increased hostile air-patrols. On 4th November 1948 a Dakota returning after para-dropping supplies near Skardu ran into two IAF Tempests in the narrow valley of the Indus. Refusing to land at an IAF airfield, the DC-3 was attacked by cannon-fire which killed a soldier and wounded a PAF officer, but skilful handling enabled it to escape without further damage. Thereafter night drops were adopted, an 'exciting exercise in the prevailing conditions. The transport detachment had now been joined by two Halifaxes converted for the supply-dropping task, a welcome addition as they were faster and could climb higher than the DC-3s. Till the ceasefire on 31st Dec 48 the PAF had done its utmost to keep the armed forces and the local population, swollen by hosts of refugees, fed and clothed at all times.

The Polish element

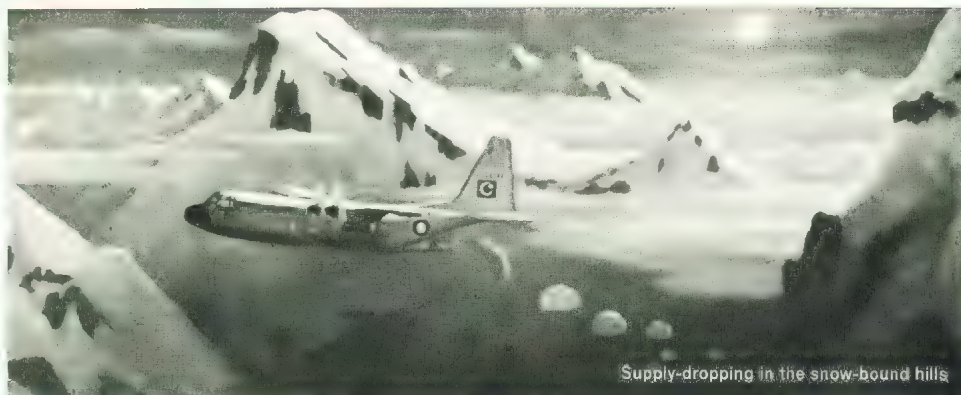
There were other problems needing urgent attention in that explosive situation, foremost to build up our strength; Pakistan's share of aircraft, men and material from the RIAF was hopelessly inadequate. A phased expansion plan was speeded up by engaging some 30 displaced Polish personnel to fill technical and aircrew vacancies. They served the PAF ably for many years and some later became Pakistan citizens: Air Cdre Turowicz served with great distinction for 17 years, attaining the highest rank and position in his branch, ACAS(M), before retiring in Jan 67, RAF volunteers and British ex-Servicemen were also recruited for flying training duties. By 1950 the operational force comprised 64 fighter-bombers in four squadrons, a transport squadron with 20 aircraft, an air observation post flight with six machines, and ten more in a communications squadron. Furies and Bristol Freighters shortly replaced the Tempests and Dakotas. The Fury was to prove immensely valuable for ground-support with its armament of bombs, rockets and four 20mm cannon. Plans were also made to re-equip one squadron with Supermarine jet Attackers.

Re-organisation kept pace with all the rapid developments of nationalisation. Large numbers of flying cadets and others were trained in UK, USA, and Australia. Air HQ moved to Karachi to be replaced at Peshawar by No 1 RPAF Group, responsible for operational control of all units in its geographical area, and another HQ opened in East Pakistan at Tejgaon, the civil airfield of Dacca. In 1949 AV-M Atcherley RAF became C-in-C of the RPAF, now with ten stations at Mauripur, Drigh Road, Malir Cantt, Sam-

Sixteen Pakistan Air Force Sabres flying in tight formation

A line up of MiG-19s in commission with the PAF since 1966





Supply-dropping in the snow-bound hills

ungli, Peshawar, Chaklala, Lahore, Sargodha, Dacca and Chittagong, and an Apprentices School at Korangi Creek, a Depot at Kohat and the RPAF College at Risalpur. The operational aircraft were mainly based at the extreme ends—Karachi in the South and Peshawar in the North, with the Transport Squadron at Lahore. AV-M Atcherley's contribution to the all-round development of the PAF was both startling and dynamic. The Service was 'enthused' with a new spirit and the conditions of airmen particularly improved. He laid much of the groundwork and the character of the new Air Force, initiating the Shahin Air Training Corps to spread air-mindedness amongst the youth of the country. Five University Air Training Squadrons were started and gliding introduced on a big scale; a Signal and Radar School opened at Malir and the PAF Regiment was formed. A scheduled weekly service by Bristol Freighters to East Pakistan started up. Atcherley also inspired the creation of a Public School to provide a future officer corps at Sargodha in March 53 with an intake of 100 boys under the care of Air Service Training Ltd of Hamble, an organisation which assisted the PAF in all spheres in its early days; simultaneously, a

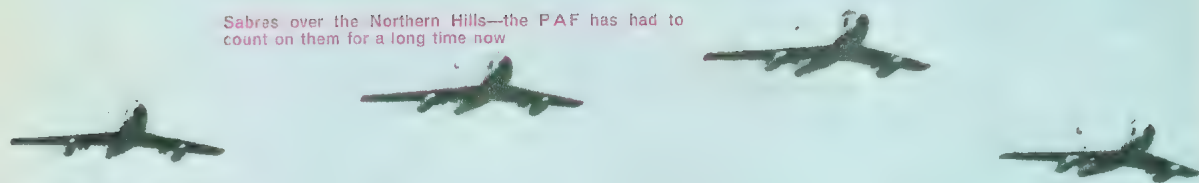
pre-apprentices school opened at Lower Topa. Games and sports were greatly encouraged by the Cs-in-C. The PAF continued its association with the RAF by sending officers on courses such as CPE, CFS, the Staff College at Andover and other technical and non-technical institutions. In an Easterly direction too the RPAF built up many contacts. In 1952 an RPAF hockey team flew to Australia and New Zealand by Bristol Freighter and played over 30 games, covering 24,000 miles in 150 hours' flying. Transport aircraft also made numerous flights to UK, Turkey, Iran, Iraq, Ceylon and Singapore.

AV-M L W Cannon became C-in-C in 1951, and during his tenure nationalisation caused AST Ltd to transfer to the RPAF the management of the Conversion School at Mauripur, the Pre-Apprentices School and the Public School. Arrangements were made with the United States Government for a Mutual Aid Defence Programme including American aircraft and equipment, and RPAF personnel took courses in advanced flying, technical engineering, radar and educational training in the USA. By and by, the new aircraft and equipment were fully integrated, with the RPAF



Pakistan Air Force
F-104s flying over the
Karaorakms

Sabres over the Northern Hills—the PAF has had to count on them for a long time now



improving its operational capabilities in the light of new responsibilities. This modernisation also entailed large-scale re-organisation of the entire Service, particularly in maintenance and supply. The development targets laid down during the command of AV-M Atcherley were thus met mostly before AV-M Cannon was succeeded in June 55 by AV-M A W B MacDonald, who could therefore concentrate on remodelling Pakistan's Air Force to meet its new challenges. 'Keeping the aircraft flying, ready to fight, equipped and trained for war' was a particularly formidable task with a simultaneous programme of expansion in progress. Concurrently, Pakistan had entered the military pacts of SEATO and CENTO, which contributed widely to improving the all-round standards of the PAF, which had now reached full operational standard on F-86F

Sabres for fighter/ground attack, B-57 bombers, F-104 interceptors and C-130 transports, while basic training was done on Harvards, then T-37s and T-33s before going on to the Sabres. This vital period of growth was supervised mainly by AV-M MacDonald before the RPAF lost the appellation 'Royal' when Pakistan became a republic in 1956.

The Air Marshals Khan

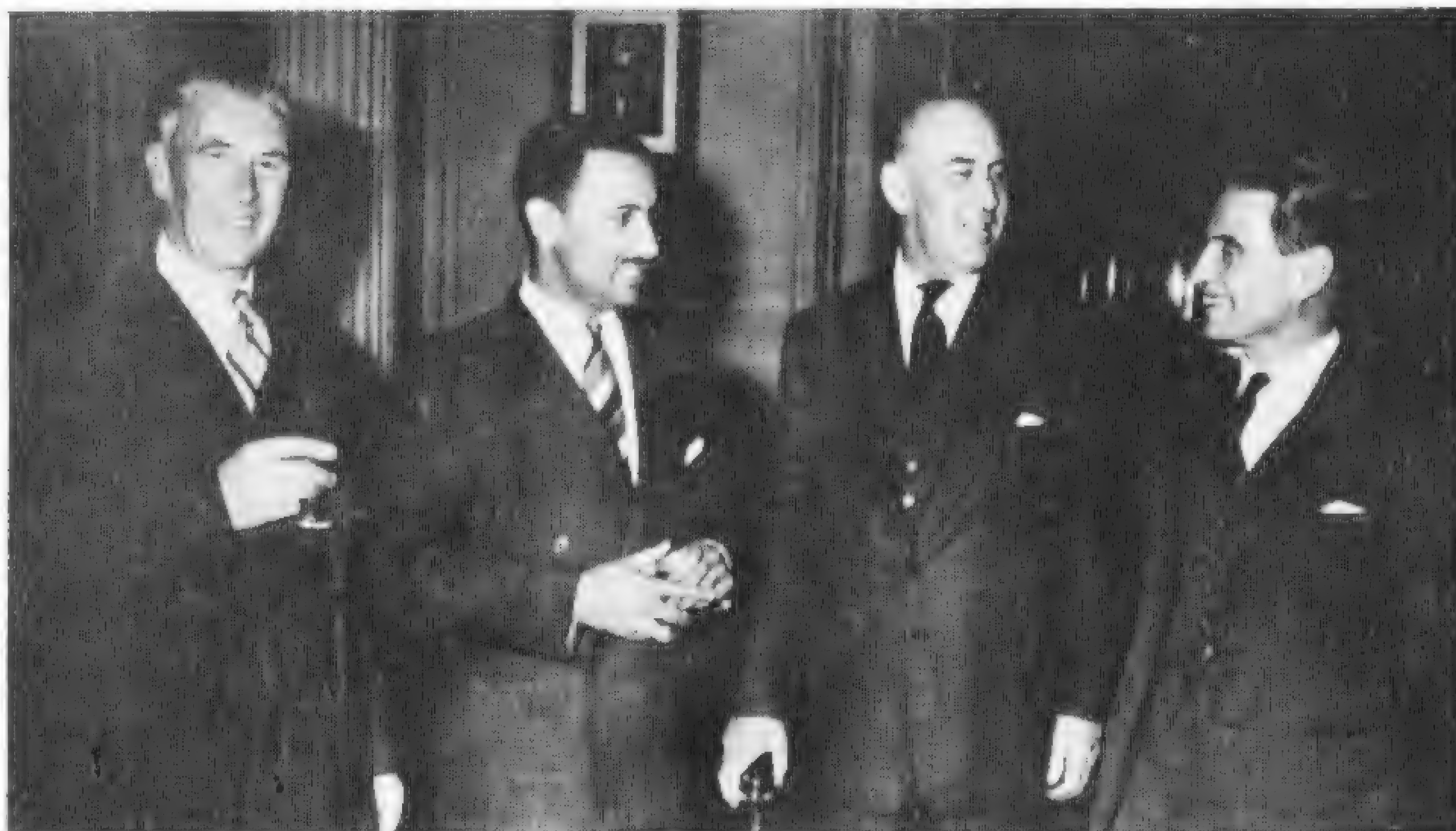
In 1957 Air Vice-Marshal (later Air Marshal) M Asghar Khan became the first Pakistani to take command of the PAF and forged it into a well-knit fighting force with those characteristics which now form part of its make-up. Air HQ returned to Peshawar from Karachi and the whole Service was re-organised as a





A-M M Nur Khan entering the cockpit

Four Cs-in-C (L-R) A V-M A L A Perry Keene, Air Commander, RPAF 47-49, A-M M Asghar Khan, C-in-C, PAF 57-65, A V-M R L R Atcherley, C-in-C, RPAF 49-51, and A V-M L W Cannon, C-in-C, RPAF 51-55



Pakistan Air Force pilot standing beside his MiG-19

single Group. Basic training at Risalpur became all-jet with the phasing out of piston-engined aircraft in the fighter/bomber squadrons and advanced training was taken up to Staff College level. This period had also seen an upsurge of unprecedented activity in civil aviation in Pakistan, when Pakistan International Airlines flourished into a well-organised airline with modern equipment and new concepts of operations under the control of Air Vice-Marshal M Nur Khan. His outstanding performance with PIA caused A V-M Nur Khan to be given command of the PAF in July 1965 on the retirement of A-M Asghar Khan, and the new Air Marshal lost no time in taking over the reins of his new appointment. To render his leadership more effective he began to fly military aircraft again, starting with the F-104, since when he has flown every type of aircraft in service with the PAF.

War with India

The invasion of Pakistan on 6th Sept 1965 marked the climax of a series of disturbances with India, in particular an outbreak of serious fighting in the desolate mud-flats of the Rann of Kutch, although this operation had been small and restricted in the use of weapons;

PAF air action had been limited to patrolling on our own side of the disputed area. But tension continued after the cease-fire on 30th April and in August more serious trouble erupted in Kashmir, which had remained unsettled since Partition, and led to large-scale Indian military operations to evict the Mujahideens (fighters for freedom). This time the Indian troops seriously violated the cease-fire line at several points, provoking Pakistan to retaliate on Sept 1st with a lightning blow which brought important gains, although still within the confines of the disputed territory. The IAF was then brought in to check the advance of the Pakistani forces, and four of their Vampires were shot down by two PAF Sabres over the battle-area on the opening day. In the early hours of Sept 6th Indian forces launched an offensive across the international border into West Pakistan. Bitter fighting ensued, and whatever the military objectives of Pakistan's adversary, they were certainly frustrated in the next 17 days. PAF's conspicuous part in the battle earned the undying gratitude and admiration of the entire nation and friends the world over. Pakistan's proven claims are 110 aircraft destroyed and 19 damaged, as well as large numbers of tanks, vehicles and guns. In the struggle the heavily outnumbered PAF gained a measure of air

Bottom left

H I M Shahinshah of Iran with President Ayub and Queen Farah Pahlavi witnessing the PAF Fire-Power Demonstration held at Jamrud Range on 9th March 1967. Air Marshal M Nur Khan who joined them after leading a precision-strafting mission in F-86s is on extreme left



F-86s coming in to land



Handley Page Halifax Mk II in commission with the PAF 1948-53

Hawker Harts of 39 Sqn take off from Miranshah 1938



superiority that enabled it to give extremely timely and effective support to its ground forces. The effort and results exceeded expectations and made a notable contribution to the land battle, for a loss of only nine aircraft in combat and another ten through various causes including flying accidents. Ten pilots, three navigators and one airman were killed.

The new Pakistan Air Force

The months following the conflict embraced some of the most crucial and testing times the PAF has had to face. In many respects they were even more critical than the days spent at war: traditional sources of supply were abruptly cut off and the PAF was faced with virtual collapse as a fighting force. This could have caused incalculable harm and danger to the country

and led to a degeneration of morale and proficiency in the Service which would not have been easily recovered, circumstances which called for a radical change in the concept on which the PAF was equipped and operated. World-wide markets had to be tapped to discover reliable sources whence new equipment could be bought and the old maintained, but many obstacles then thought to be insurmountable have since been overcome. Operational now with the PAF are the versatile MiG-19s and a new all-weather fighter is soon to find its way into service. As a result the PAF is today more self-reliant, stronger and effective than ever before. Never in doubt as to how it must maintain itself if it is again to repeat its past performance in its obligations to its country, the Pakistan Air Force trains assiduously for this task under the confident leadership of Air Marshal Nur Khan. ©

Right A Royal Pakistan Air Force Supermarine Attacker
Below The Hawker Fury, finest of piston-engined aircraft, was also the last to serve the PAF

Bottom right At Nalton on a PAF Ski and Survival Course

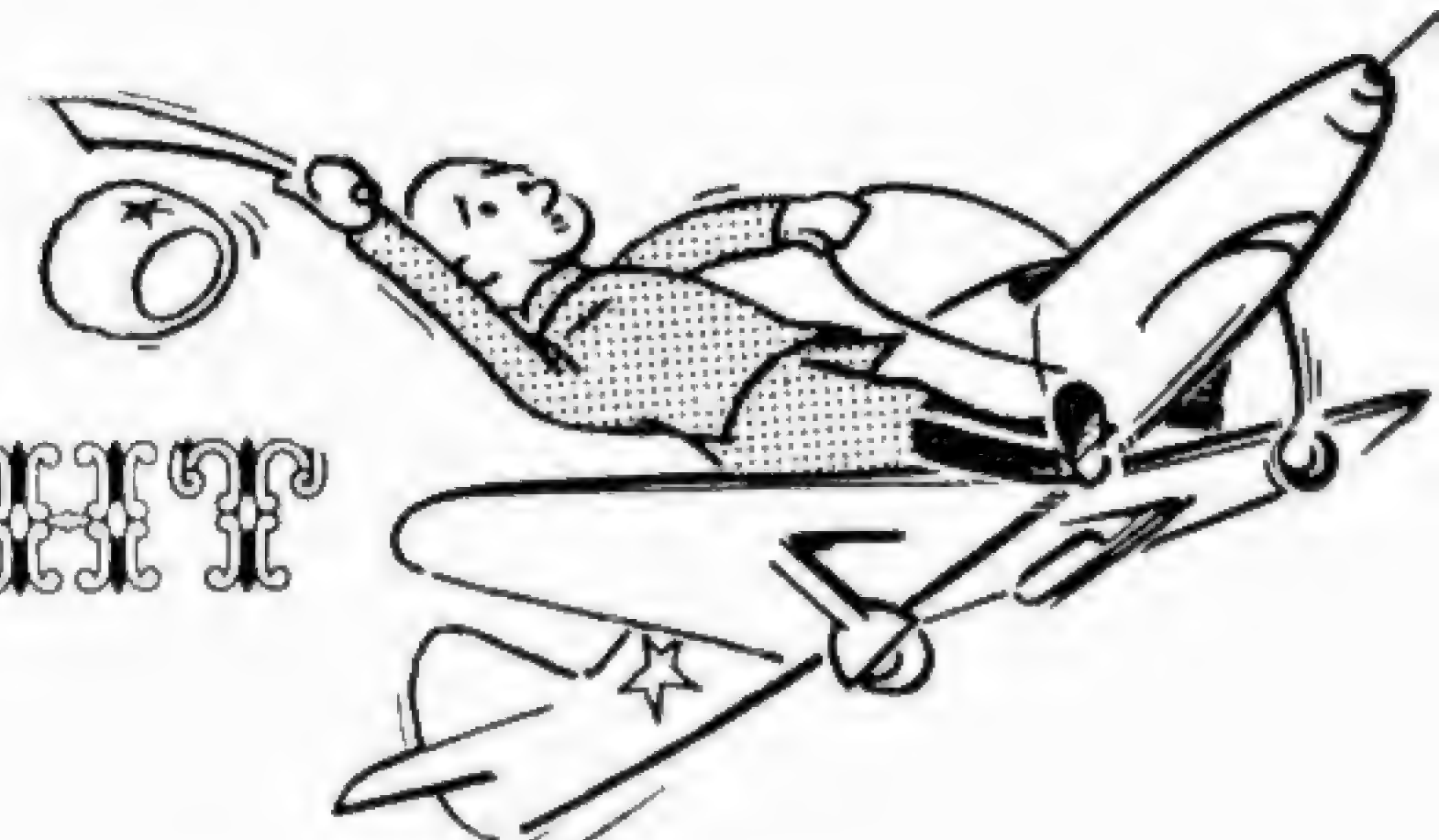


Westland Wapiti at Kohat in 1938



Hurricanes at Kohat: long in commission with the PAF, Hurries were phased out over a decade ago

BOGDANOV'S TEST FLIGHT



by Wg Cdr G C T Richards MA

25 YEARS ago it was, on January 18th, the airfield ten feet deep in snow, with a runway not cleared but simply rolled hard and edged with black flags. You see, you can't judge your height over snow; there is no horizon. So every landing is a sort of photographic negative of a night landing, with the ground white and the flares black.

Bogdanov was a compact alert major with an earthy sense of humour, the 'hands' of an angel, and a lot of medals. In three months in this way-out bend of the Volga he had taught us a lot about snow-flying and we had taught him a fair bit about Hurricanes. The Station Commander, a Lieut-Col—Pot-Polkovnik—seemed to me then to be of venerable age and benign nature. I shall never forget his sad smile as he told me, after one of my Hurricane exhibitions, that he would assuredly bury me in Russia.

The Christmas present arrived in December; a large crate labelled AIRACOBRA. I don't suppose many of you remember the Airacobra—an ambitious aircraft for its day, but its ambitions outstripped its talents. The engine was behind the pilot, and if you applied the brakes too hard it tended to nudge you in the kidneys. Then it had a new-fangled long-legged tricycle undercarriage, and its landing run always looked to us like a bath-chair out on a jag. Last, it was all electric . . . nothing hydraulic or pneumatic about this baby; switches activated her every operation.

For some reason Pot-Polkovnik went all temperamental and proprietary over his Airacobra set. National

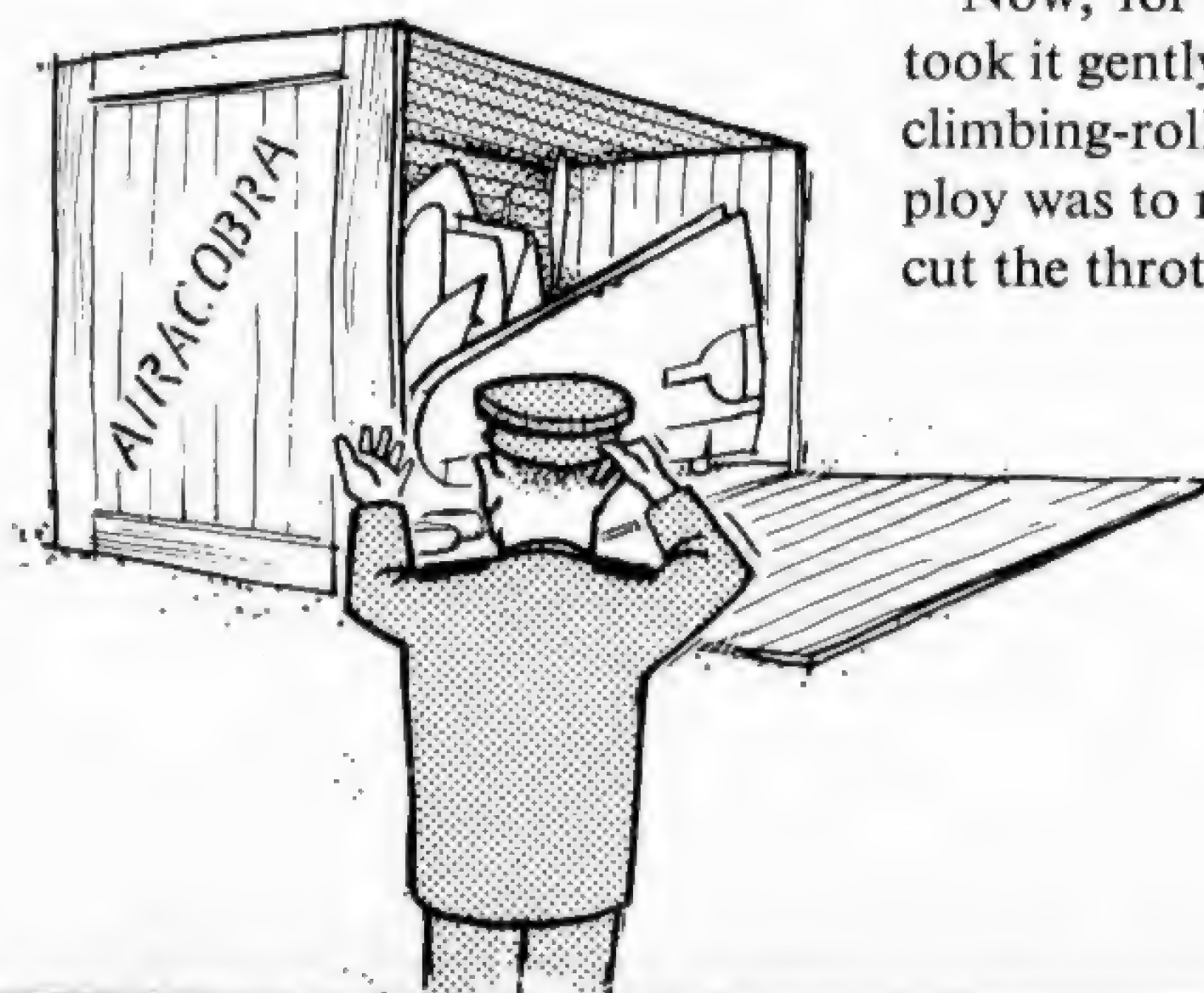
pride, I suppose. He had accepted us as the Hurricane experts, but he took the view that American aircraft were as foreign to us as to them. So when we offered our help, he declined with some hauteur: 'We have our own methods for dealing with foreign aircraft.' And promptly had us escorted from the Airacobra hangar at the point of the OGPU.

But during the evening vodka sessions we heard about the engineers' difficulties. The undercart, for example, worked on the cuckoo-clock principle, with little doors to let the wheels out and close again when they were safely back home. The Russians found that by some inexplicable electrical quirk the doors had mistaken their function and were slamming themselves inhospitably in the very faces of the lifting wheels. Then there were problems with the flaps. They were operated by a simple two-way switch: UP or DOWN. By some error of circuitry the Russians had offered the pilot two equally unstable alternatives: port up, starboard down; or starboard up, port down. Pot-Polkovnik kept a brave face throughout, but for two weeks his engineers either avoided us or drank their vodka with sealed lips, starving our curiosity. Then on January 16th Pot-Polkovnik, with a vodka in each hand and a gleam of triumph in each eye, announced: 'The Airacobra flies tomorrow.'

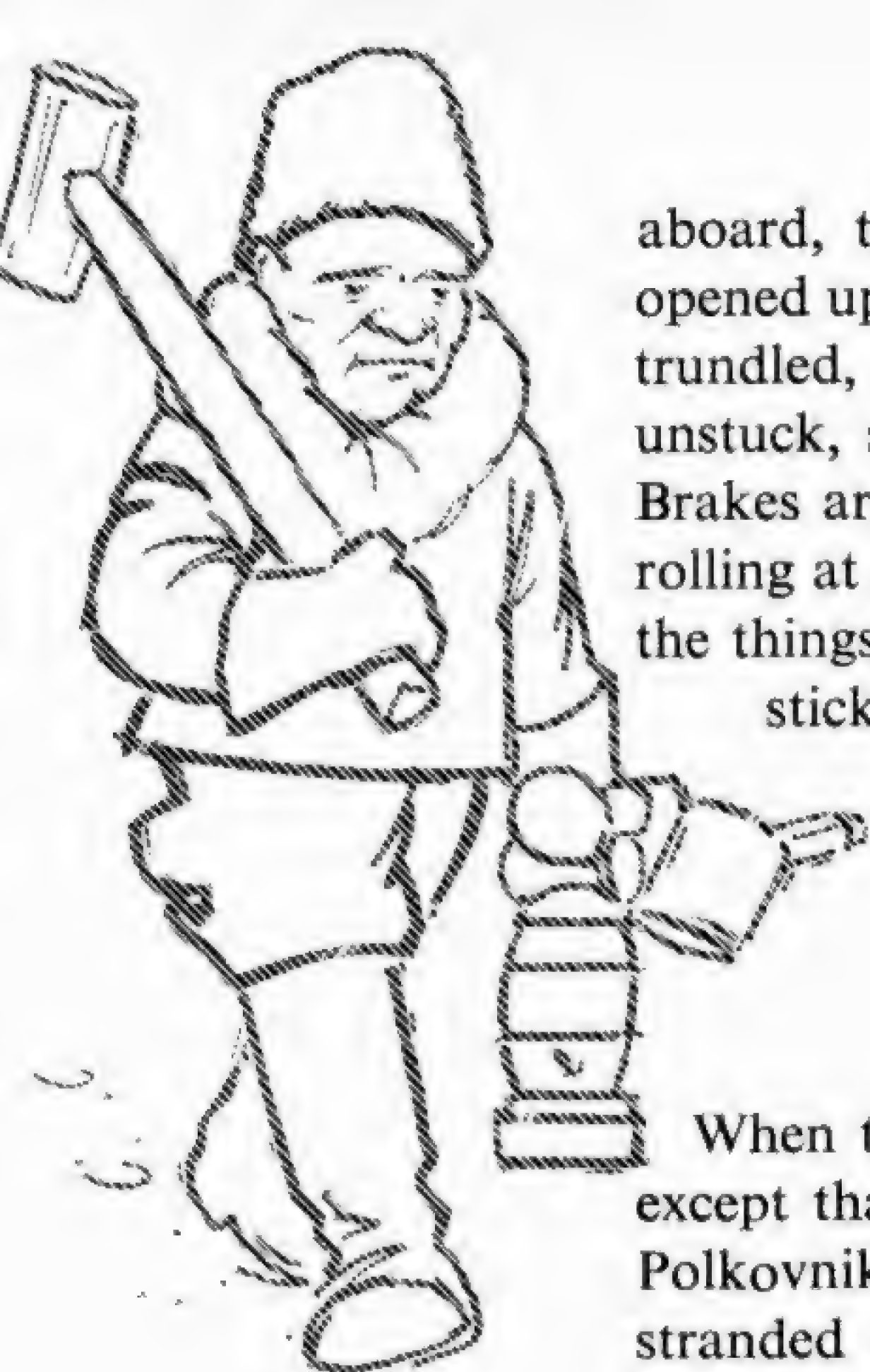
We were startled. 'Have you solved all the problems?'

'There are fifteen things we do not yet understand. Our test pilot will find out about them in the air.' We did not argue. Pot-Polkovnik, conscious of a good curtain-line, had left, and Bogdanov seemed unworried.

Now, for 1941 Bogdanov was a good test-pilot; he took it gently. None of this straight-off-the-ground-in-a-climbing-roll-in-a-brand-new-aircraft stuff for him. His ploy was to roar down the runway till she unstuck, then cut the throttle and drop her back again. So he climbed



The Christmas present arrived—a large crate labelled AIRACOBRA



aboard, tested the controls, ran the engine hot, and opened up. She obeyed his every touch. Nose down she trundled, nose level she galloped down the runway, unstuck, sank back . . . and ran—and ran—and ran. Brakes aren't much help on rolled snow; she was still rolling at about 20 mph when she hit the snow. One of the things Bogdanov had not known was that her unstick speed was a lot higher than the Hurricane's.

'We met a blacksmith
with . . . a large hammer'

When they dragged her out she seemed undamaged except that the nose-wheel leg had a nasty kink. Pot-Polkovnik despatched a runner, and as we left her stranded and forlorn in the falling dusk, we met a blacksmith armed with a storm-lantern, a blow-lamp, and a large hammer. Bogdanov was cheerful in the bar that night; the damage was slight and easily repaired. Besides, he now knew the unstick speed, and this reduced the 'x-factors' to fourteen. He obviously believed that this significantly shortened the odds against a successful maiden flight on the morrow.

We escorted him back to her side next day. Perhaps 'escorted' is not the best word, redolent as it is of a firing party or a funeral cortege . . . at any rate it would not have seemed the best word to Bogdanov. He was bubbling with that blend of confidence, elation, and excitement familiar to any pilot. The mechanics were just removing the thawing equipment needed with the temperature below -40° and the oil frozen solid in the sump. The two great hoses had been removed from the air-intake and engine cowling, and the giant Primus stove and hot air fan were being wheeled away. She looked good—except for those extraordinary legs. The front one had a blued-steel bruise on her shin where the kink had been, but at least it looked straight to the naked eye. Bogdanov slipped happily into the cockpit.

Perhaps I should explain about the automatic boost control. It was one of the things Bogdanov didn't know about . . . and we didn't know he didn't know. Even if we had, we didn't know the Airacobra didn't have one because we hadn't seen Pilot's Notes. You know how it is with atmosphere: the higher the thinner. So the higher you climb the harder the supercharger has to work to supply the engine with air. But if it were allowed

to pump with the same vigour at ground level it would pump more pressure than the engine could take and something would have to give. An automatic boost control takes care of this problem. You could push a Hurricane's throttle wide open at any height and a cunning little aneroid saw to it that the engine was not over-loaded. But the Airacobra didn't have one; the pilot had to keep an eye on his boost gauge and handle the problem himself.

So there was Bogdanov all ready to go. He held her on the brakes till she started to slide, then opened the throttle wide. That take-off would have startled even a 1970 Farnborough crowd. One moment there was an Airacobra quivering at half-throttle; the next, in a blizzard of screwed-up snow, she was gone. We side-stepped the blizzard in time to see her racing up the runway trailing this induced snow-wrack behind her like a bridal train. She left the ground and her climb steepened in a dramatic parabola. She must have made a record climb to 1,000 ft that was not broken till the Hunter.

It was at about 1,200 ft that she exploded. Not dramatically you understand, but in a deliberate sort of way. First the air-intake fell off, then a feather of flame showed itself behind the cockpit. Then Bogdanov fell out. Shedding little bits as she went the Airacobra whirled away into the eternal snows. We weren't worried about her; we were too busy worrying about Bogdanov, for his parachute had not opened. We found him at last, his parachute lying limply on the edge of the tidy hole he had drilled in a blessedly deep drift. He was concussed, no more.

We visited him as he lay in bed with the top half of his poor old head apparently held together by tape, like a bound cricket-bat. We didn't tell him how it had happened because at that time we didn't know ourselves. But something we could have told him, we did not; he was not ready for the news. A signal had come the day after his flight:—

THIRTY AIRACOBRA COMMA WITH
ERECTION AND TESTING PARTY COMMA
LEFT ARCHANGEL TODAY FOR YOUR
BASE STOP ONE CRATE AIRACOBRA
SPARES DESPATCHED TO YOU LAST
MONTH STOP ACKNOWLEDGE SOONEST
STOP END OF MESSAGE ©

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In a Georgian mansion 50 yds from Park Lane, a well-stocked bar, comfortable lounges, an attractive dining room serving excellent meals, and comfortable sleeping accommodation at bargain prices, are facilities enjoyed by members of this well-known Club for serving and retired RAF and its Reserves Officers, RAFVR Training Officers, wartime air crew NCOs and gentlemen engaged in Aviation and Air



Transport. WRAF Officers can also become Lady Members. Gp Capt Douglas Bader has just accepted re-appointment as President for another 3 years. It costs only 5 gns p a if you live in Town, and for $2\frac{1}{2}$ gns or 1 gn a Country or Overseas Member can use the Club when visiting London, such low subscriptions made possible by a large and increasing membership. If you want more details, write to: Sqn Ldr H C Room MBE at 14 South St, London W1 'phone 01 499 1738 9

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14 days
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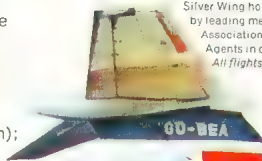
If your complaint is British Winter
you'll find a BEA Silver Wing Holiday
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What's the point of huddling in the dull and drear when you could be living-it-up in the snow or sun. Take a BEA Silver Wing Holiday... an all-inclusive winter-elusive holiday. Just wing away and ski the wide white slopes — at Arosa, where 14 days inclusive will cost you from just £49, or Lillehammer from £52. Or seek the winter sun in Cyprus — 14 fabulous days at Famagusta, from £88 (demi-pension); or Malta from £67. Take a Cunard Cruise from Gibraltar — Silver Wing style from only £109 for 14 days! Escape? Take a weekend holiday in Paris or Amsterdam! Jet to wherever sun and fun call... and just remember that it's good for you. Very.

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Hendon Road, Sunderland,
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Winter Silver Wing Holiday Book
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SILVER WING HOLIDAYS

NAME

ADDRESS

RAF 1

*Almighty and all present Power,
Short is the prayer I make to Thee;
I do not ask, in battle hour,
For any shield to caver me.
The vast unalterable way
From which the stars do not depart
May not be turned aside to stay
The bullet flying to my heart.
I ask no help to strike my foe,
I seek no petty victory here;
The enemy I hate, I know
To thee, O God, is also dear.
But this I pray, be at my side
When death is drawing through the sky.
Almighty God, who also died,
Teach me the way that I should die.*

Flight Sergeant Hugh Rowell Brodie, RAAF, a former schoolmaster from Victoria, Australia, was killed in action over Germany on 2nd June 1942 at the age of thirty flying with 460 Squadron. So far as can be ascertained this short devotional fragment which was first printed in 'War Service Record 1939-1945', published by the Victoria Education Department and subsequently appeared in a booklet produced in New Zealand by the Methodist Church Group, was the only poem by Brodie to be published



You deserve the good taste of Gold Leaf—why settle for less?

GOLD LEAF
are made for the
smoker who knows
what he wants...

taste!



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MACDONALD

MACDONALD are among the world's leading aviation publishers. Below we list the two latest publications from our wide range of books on all aspects of aviation, both civil and military.

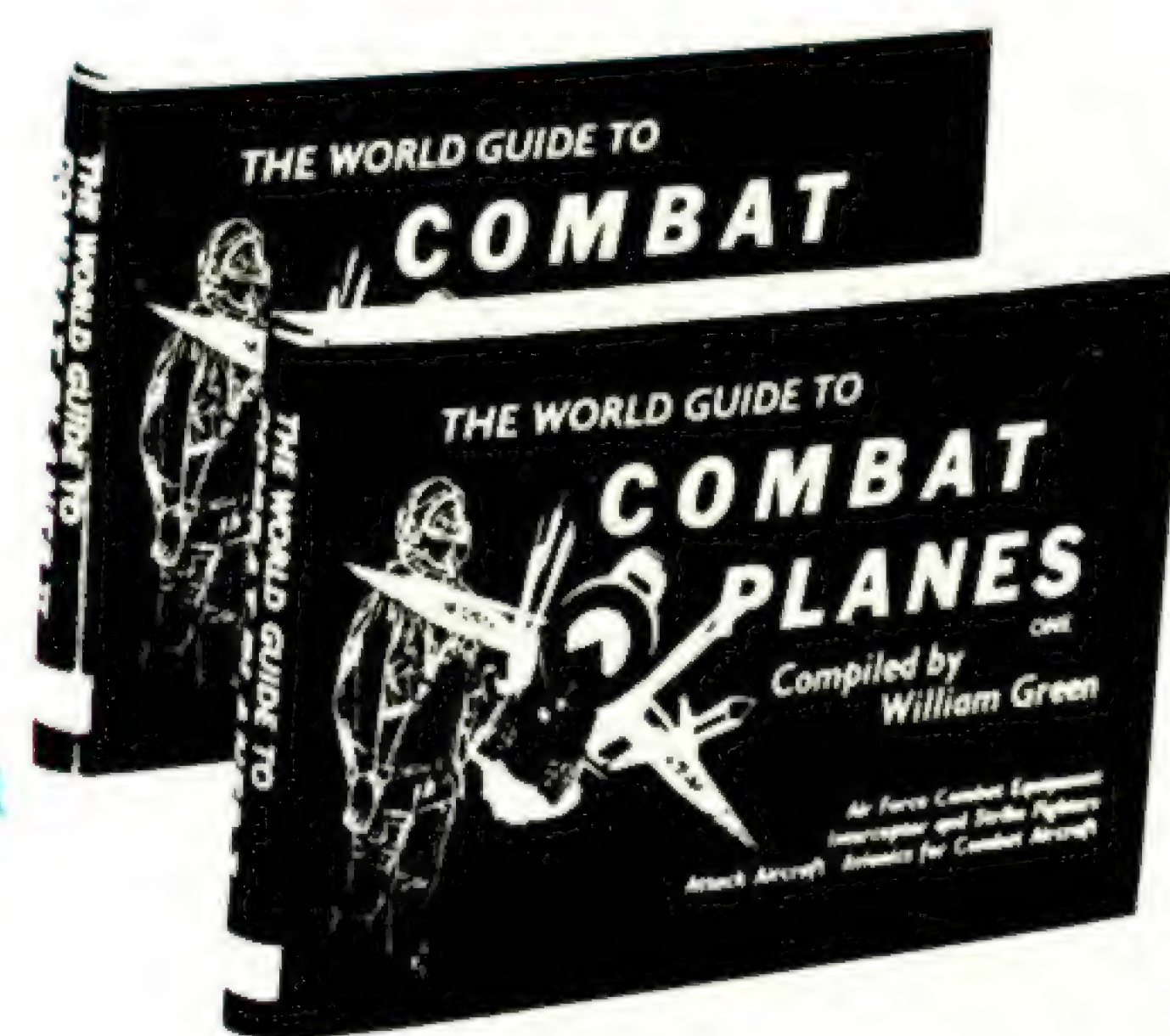
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Stephen Hastings M.C., M.P.

"Mr. Stephen Hastings paints a vivid picture of the birth and death of this great aeroplane. His book ought to be read by all people who take an interest in the fortunes of our country."—G. SILYN ROBERTS, *Journal of the Royal Aeronautical Society*
208pp 20 Photographic illustrations 35s.

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Now in its fifty seventh year of issue. Reviewing the 1965-66 edition, *The Royal Air Force Quarterly* said:

"... must indeed be the most comprehensive and authentic record of aircraft in the world ... Everyone with aviation interests, whether personal or professional, should possess this valuable record of everything that is airborne throughout the world."

557 pages of text, with comprehensive illustrations and index. 8 guineas



the best of THE YEAR'S AIR BOOKS

reviewed by

GORDON SWANBOROUGH

DESPITE inevitable price increases, books still represent outstanding value for money. Thus a judicious expenditure of £10–15 on recent aviation books would cover the whole range of air and space activity from the 18th century to the present day and provide both a lasting reference library and much stimulating and interesting reading material. Of course, *Jane's All the World's Aircraft* (Sampson Low £8 8s) is the cornerstone of any aviation collection, and John Taylor succeeds in adding to the reputation of the World's best-known and longest-established aviation reference work every year; crammed with facts and pictures, it is, quite simply, indispensable. But other volumes offer variations and permutations on the Jane's theme at lower cost: eg, *Warplanes of the World* (Ian Allan 21s), *The Observer's Book of Aircraft* (Warne 6s), *Civil Aircraft Recognition* (Ian Allan 3/6). A new approach to reference books is provided in two volumes by William Green, *The World Guide to Combat Planes* (Macdonald 25s) which provide concise and valuable data on combat equipment and operational matters, as well as the aircraft themselves. Concentrated information on an earlier age is also to be found in many of the year's additions to the well-known Putnam range, *Boeing Aircraft Since 1916* (84s), *British Flying Boats and Amphibians 1909–1952* (50s), *European Transport Aircraft Since 1910* (105s) and *The British Bomber since 1914* (84s). Harleyford, too, added a third title on the aircraft of World War I, *Marine Aircraft of the 1914–18 War* (60s).

Among the smaller historical volumes several of similar format came from the USA, among them the *Historical Aviation Album Vol III* and the *Aero Series* of single-aircraft profiles covering such types as the Me 109, HE 162, Boeing P-12, Ju 87, Spitfire, Do 335, and P-47 (in UK, WE Hersant, all at 23/6). Charles Gibbs-Smith, curator of the Victoria and Albert Museum and indefatigable researcher into the aeroplane's ancestry, was widely acclaimed for *The Invention of the Aeroplane 1799–1909* (Faber and Faber 84s), and rendered all historians a service with his *Directory and Nomenclature of the First Aeroplanes 1809–1909* (HMSO 27/6), while L T C Rolt contributed a history of ballooning in *The Aeronauts* (Longmans 45s) and H F King produced the results of some highly

individual research in *Aeromarine Origins* (Putnam 30s). Of particular importance was Harald Penrose's *British Aviation—the Pioneer Years* (Putnam 84s), combining fine literature with scholarly research. *The Aviators* (Angus and Robertson 27/6) provided a history of Australian aviation and its personalities from Laurence Hargrave on; flights from Europe to Australia figure prominently in this story, while in *Atlantic Wings 1919–39* (Model Aeronautical Press 90s) North and South Atlantic crossings provide the drama. But just one flight—Amelia Earhart's last—inspired sufficient drama and interest for a long new volume by Fred Goerner, *The Search for Amelia Earhart* (Bodley Head 30s). Much mystery still surrounds Earhart's disappearance on a round-the-world flight in 1937 but Goerner's evidence that she was imprisoned by Japanese forces as a spy was, at best, circumstantial: a different view will be presented in the yet-unpublished autobiography of the late Paul Mantz, who was closely concerned with the preparations for the Earhart flight. Another flier with a tale to tell is Francis Chichester, whose single-handed circumnavigation of the World in 'Gipsy Moth IV' adds interest to re-issues of his books describing flying adventures, *Alone over the Tasman Sea* (Temple Press 18s) and *Ride on the Wind* (Hamish Hamilton 30s); his highly entertaining autobiography *The Lonely Sea and the Sky* also reappeared as a paperback (Pan 6s).

World War II stories are not as numerous as they were, but some new titles have covered lesser-known operations and episodes. In the Official British Series of War Histories, *SOE in France* (HMSO 45s) dealt with clandestine operations of the British Secret Service, with *Secret Air Missions* (Richards Rosen Press NY \$3.78) lifted the veil over some similar USAF operations in the Mediterranean. Of the 80 men in 16 B-25s who flew from the decks of the USS 'Hornet' to strike at Tokyo in April 1942 under Gen Doolittle's command, eight fell into Japanese hands, and the four who survived tell their story in Col G V Clines' *Four Came Home* (D Van Nostrand 48s). Another outstanding USAF operation, ferrying supplies over the Himalayas from India to China, was recalled in *The Hump* (J B Lippincott NY \$5.50). Personal stories of the war came from two

airmen with distinguished records—Lord Tedder's *With Prejudice* (Cassell 63s) and Lord Douglas' *Years of Command* (Collins 50s).

An important contribution to the literature of aerial warfare came from the Duke of Lerma, Capt Jose Larios, a Nationalist fighter pilot from 1936–9, in *Combat over Spain* (Macmillan NY \$6.95). Fighter 'aces' of both sides in World War II were described in two new volumes—*Aces High* (Spearman 50s) and *Der Ritterkreuzer der Luftwaffe 1939–45* (Verlag Dieter Hoffman/Graham K Scott 87/6), but World War I was mirrored in new novels rather than personal recollections, with two notable titles, *In the Company of Eagles* (Hodder & Stoughton 25s) in which Ernest K Gann turned his widely-admired talents to the 1914–18 period for the first time to give a vivid portrayal of the air war as seen by French and German fighter pilots, and *A Killing for the Hawks* (Harrap 22/6), an equally gripping account of the tensions between a British CO and his pilots, with some excellent flying descriptions. A 'popular' history of the Luftwaffe was found in *The Luftwaffe: A History* (Frederick Muller 43s) and much more serious reading in *The Broken Wing* (Hutchinson 45s), in which David Divine attempted a study of British air power. Controversial, too, was *The Roots of British Air Policy* (Hodder and Stoughton 30s), Richard Worcester's long-awaited full-length justification of his widely-quoted and frequently anti-British aircraft industry views. Worcester was regarded by some as the arch-instigator of the TSR-2 cancellation, recalled in Stephen Hastings' study *The Murder of TSR-2* (Macdonald 35s).

Several of the year's technical books were of special merit, notably D P Davies' *Handling the Big Jets* (ARB 30s), a distillation of the accumulated expertise of the chief test pilot of the Air Registration Board, who probably has more hours of actual flying (and not just monitoring the auto-pilot) in jet transports than any other pilot. Darrol Stinton made a useful contribution to understanding why different aeroplanes are the shape they are in *The Anatomy of the Aeroplane* (Foulis 63s). Many more aviation titles of varying quality, appeared last year, but perhaps it is because aeronautics is itself so exacting a science that so many of the books on aviation are not simply good but truly outstanding. ©



PAPER BULLETS

— fired in the Battle of Britain

Whether you accept the Battle of Britain as starting with Churchill's 'Finest Hour' speech on 18 June or in mid-August with the Fuehrer's 'Eagle Day,' for the Psywar Division it began on 24 April, the day after the RAF stopped dropping leaflets over Germany for three months, because of the seriousness of the military position at home following the wholly unexpected sudden defeat of the Low Countries and France. Considerable Psywar re-organisation had taken place when on 22 July three RAF Squadrons bombing industrial plants in Germany again dropped leaflets for enemy reading.

The first new leaflet, No 410, although undoubtedly written before the German war machine had rolled westwards, was our first attempt at 'black' propaganda, purporting to originate from a German source. Written in official German, it aimed at confounding and embarrassing the enemy population, or at least made the Nazi Government look ridiculous to those who saw through it. *Official Notice* stated that over 70 German towns had been bombed and our raids would increase; that anti-aircraft fire and fighter planes could not stop the Allied bombers; that German troops would be kept in occupied countries; that there would be more call-ups, and lists of casualties would not be published.

Then three days later the heavy bombers of the Operational Training Units (for whom leaflet-dropping was a final exercise) dropped tens of thousands of leaflets listing Luftwaffe air losses on to heavy German troop concentrations in France. 412 was the first to deal with the current daily air battles and was dropped continuously for three days and nights. Its main propaganda (in German and French) was that in the week ending 12 July over 100 German planes had been lost over Britain, and claimed that the Nazis divided German losses by six while multiplying British losses by three.

While the Battle of Britain was being fought by Fighter Command, Bomber Command was raiding Germany's strategic and economic centres with paper bullets as well as high-explosives and incendiaries. During August *Reich Headquarters* (415), *Public Enemies at Work* (417) and *Facts known to the whole world* (420) were scattered over many German cities, 415—being 'black' propaganda—and 420 containing the news that '240 German planes had

been lost over the English coast in July,' the ratio of casualties being 5:1 in our favour. Another *Facts* leaflet (424) dropped on the night of 25/26 August told the German people that since mid-June over 450 German machines had been shot down over our shores and asked: *And the crew loss...?* It cited the huge German air armada of 8 August with its escort of 400 fighters and reported the Luftwaffe's loss as 66 against the RAF's 16. Such *Ratio of Losses* propaganda continued into October, with a table of comparative losses in planes and aircrews from 16 June to 31 Aug. Sixty-three towns bombed by day and night were also named to bring home to the German people the damage being inflicted on Hitler's industrial war machine. At the same time, the wavelengths and transmission times of BBC news programmes were given for relatives of POWs in British hands, and propagandists suggested that: *If your relation is missing—perhaps he is a prisoner?*

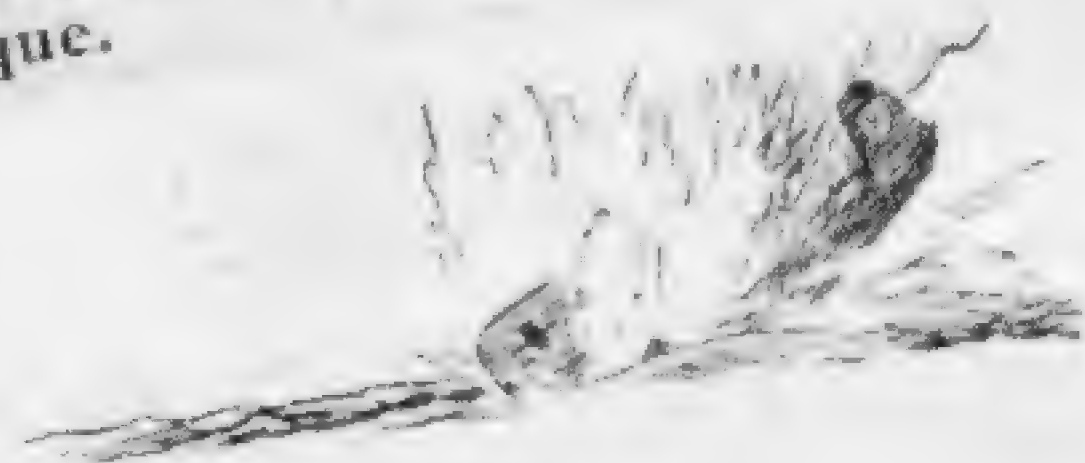
Who Speaks the Truth?

Churchill's report to the Commons on 5 Sept that Britain had lost 558 planes in July and August, was reproduced in *Who speaks the truth?* (432) together with Dr Goebbels' assertion that we had lost 1,921 planes. Millions of copies of this propaganda went on to decry Goebbels and his false statements. Then on 15 Sept came Fighter Command's crowning triumph in the Battle which proved to be the turning point of the air war and forced Hitler to abandon his invasion against the British Isles. For the Germans we dubbed this day *Black Sunday* in pamphlets 432-3 under which title our 'psywar' writers informed the Germans that their High Command had reported only 179 German aircraft over London that day, whereas no less than 187 were actually shot down, among them 131 bombers. Indeed, during the previous week the Luftwaffe's total loss was 471 for 96 of our fighters, of whose pilots, moreover, 43 were saved.

Subsequent aerial propaganda does not mention the Battle of Britain until 21 Dec when the British authorities gave the British and German losses over several months. Leaflet 458 recalled that 11 Aug saw the start of the massive air armada against England. It

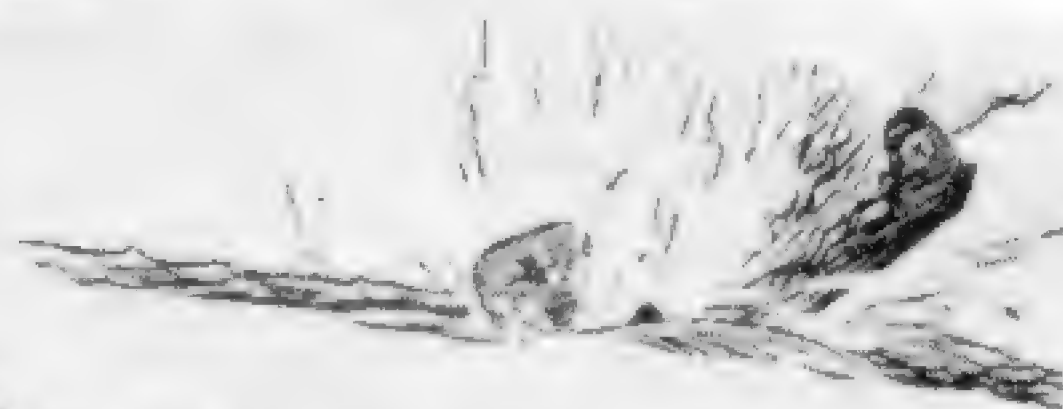
FRANÇAIS

Du 5 au 12 juillet, en une semaine, plus de cent avions allemands ont été abattus par l'aviation britannique.



Mais on ne vous l'a pas dit. Le Haut Commandement allemand cache systématiquement la vérité aux français comme il la cache aux allemands mêmes. Il divise par six le chiffre des pertes allemandes. Il multiplie par trois le chiffre des pertes britanniques.

EXIGEZ LA VÉRITÉ



In einer Woche über 100 deutsche Flugzeuge abgeschossen!

In der Woche vom 5.-12. Juli wurden über 100 Maschinen der Deutschen Luftwaffe von britischen Jagdflugzeugen vor Englands Küste abgeschossen.

DEUTSCHES VOLK!

DAS OKW BELÜGT DICH!

Das OKW vertuscht planmässig die Verluste der deutschen Luftwaffe. Deutsche Verluste werden durch sechs geteilt! Britische Verluste werden verdreifacht.

Verlangt die Wahrheit!



by R G Auckland

quoted the Nazi newspaper *Angriff* of 20 Aug: *The way to England is free! Germany has air supremacy!* and gave the final reckoning as 2,552 German planes lost over *perfidious Albion* against the RAF's 777 from 11 Aug to 15 Dec. Thus was the progress of the Battle of Britain reported to German civilians, such little propaganda as there was being occasioned by the more startling events as they occurred and not as a day-to-day report, for the psywar policy was to concentrate on political and economic issues. It might be added that the post-war official figures proved equally surprising to the British people and the Germans!

So far no reference has been made to leaflets dropped over occupied cities and towns during the Battle. With practically all Western Europe and Scandinavia occupied by the Nazis, an attempt was made to boost morale and maintain the image of an unconquered Britain and the free world. The first of these (430) gave the French people the text of the agreement between the British Government and General de Gaulle and reproduced the letters of Churchill and the Free French Leader, but another, a month later, gave the lie to Goebbels' and Germany's air claims by repeating the table of aircraft losses given in German leaflet 427 (a ratio of 3.9:1 in Britain's favour), and praised the RAF and its policies. *Quand-meme* ran to three editions in November, the last—a large two-page newsheet giving news mainly about the Free French Forces—quoting losses from 11 Aug to 9 Nov as German: 2,385, Britain: 744 with 395 pilots saved.

Belgium's first aerial leaflet (No 200) gave information to Belgian workers about the RAF's bombing of Germany, but the second, a two-page newsheet named *Le Phare Belge* (Belgian Lighthouse), covered world-wide war news. One of the items mentioned the aerial combats taking place over Britain, listed Luftwaffe losses as 1,453 against the RAF's 385 with 181 pilots saved. This covered the period 18 June to 3 Sept. For *Black Sunday*, our loss was given as 25 for Germany's 187, an *all-time record!* The *Lighthouse*, printed in French and Flemish, and dropped from 12 Oct to 11 Dec, was the only Belgian leaflet to mention the Battle of Britain. Others warned the Belgians not to be divided by Nazi guile. Holland received a newsheet in October entitled *Vrijheid Vergaat Niet* (Freedom does not perish), mainly

This gangster, who you see in his element in the picture, incites you by his example to participate in a form of warfare in which women, children and ordinary civilians shall take leading parts.

This absolutely criminal form of warfare which is forbidden by the

HAGUE CONVENTION

will be punished

according to military law

Save at least your families from the horrors of war!



Winston S Churchill, Gangster!

concerned with the Dutch Royal Family and Free Dutch Forces, but it mentioned that since mid-September the Germans had lost 2,423 planes, compared with an Allied loss of 637 aircraft (less 306 pilots).

From the other Side

German air propaganda directed against the English during the Battle of Britain was negligible. Their first pamphlet was purely political, containing much of Hitler's speech before the Reichstag of 19 July, recapitulating the events in Europe since the invasion of Norway, and eulogising the glorious achievements of his three fighting services . . . it gave a long list of field promotions of Army and Air Force officers. The two-page 18½ in. x 12 in. leaflet—one of the largest of World War II—was dropped all over the British Isles early in August, from the Welsh hills to the streets of East Anglia. But his tirade was stale news, having already been extensively quoted in the British press, and made no impact on public opinion. So little did people think of this *Last Appeal to Reason* that examples were sold for pennies at fetes and garden shows for the Red Cross. An abbreviated version, *From the Fuehrer's Speech*, was also dropped over the Midlands areas, where they were equally unimpressed.

The second leaflet was showered over selected towns in southern England during the Autumn of 1940 when the air battles could still be seen over the countryside and out to sea, and threatened to punish British civilians according to military law if they acted as agents-provocateur or guerrillas when the German Army invaded the British islands. Churchill was pictured, cigar in mouth and holding a tommy-gun, as a *gangster*, **WANTED FOR INCITEMENT TO MURDER**, for encouraging the

British population to participate in civilian warfare, a reference to the forming and arming of the Local Defence Volunteers, later to become the Home Guard. The picture had been taken when Churchill visited Army installations on the East coast a few weeks previously.

An echo of the beginning of the Battle of Britain era was heard in December 44, when a German aerial leaflet was used on the Western Front against the Americans. It referred to the collapse of the Allied line from Monschau to Trier—and *we are still driving forward*. 619SK 6b was dropped during the Ardennes offensive and headed *Dunkirk repeated?* in the hope that Allied soldiers would remember and lose heart for battle. This was a popular theme in various leaflets dropped over occupied France from 1940-44 published by French pro-German organisations . . . but Dunkirk and Invasion leaflets are another story. ©

The Führer said:

"Ever since the commencement of the National Socialist régime, two points were prominent in the programme of its foreign policy.

1. The achievement of a real understanding and friendship with Italy,
2. the achievement of the same relationship with England.

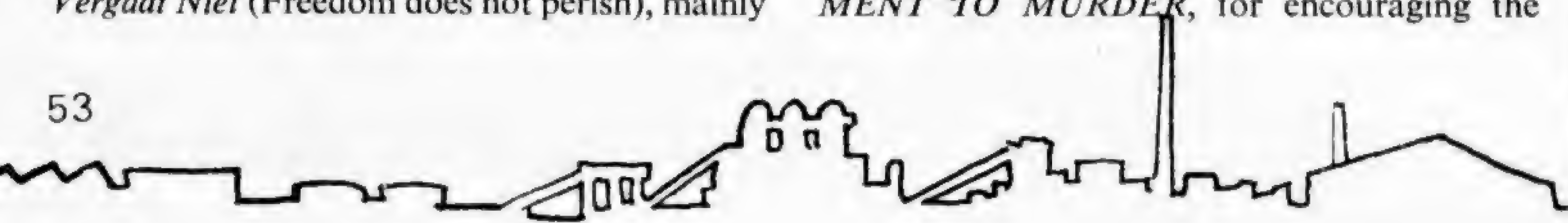
You are aware, Gentlemen, that these ideals inspired me twenty years ago to the same extent as they did later. I have expressed and defended these ideas in print and in speeches on innumerable occasions, as long as I was only a member of the Opposition in the democratic Republic. As soon as the German nation entrusted me with its leadership, I immediately attempted to realize in practical form this, the oldest of the ideals of National-Socialist foreign policy.

Even today I still regret that, in spite of all my efforts, I have not succeeded in achieving that friendship with England which, as I believe, would have been a blessing for both peoples. I was not successful in spite of determined and honest efforts."

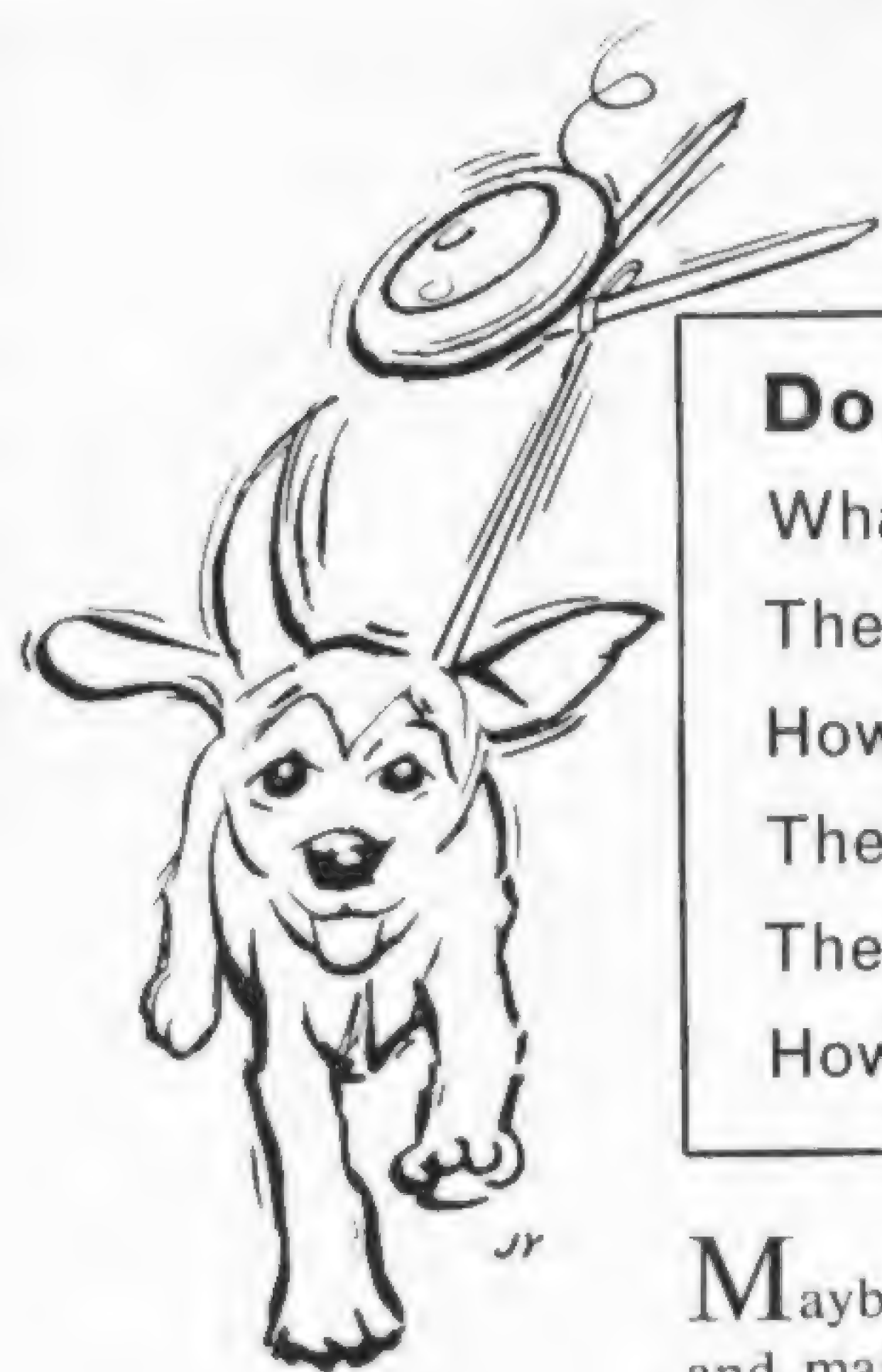
Later in his speech, the Führer said:

"In my speech on October 6, I prophesied correctly the further development of this war.

I assured you, Gentlemen, that never for one moment did I doubt in our victory."



'If a dog is carried, it should be left tied to the aeroplane, as it is an insult to take an animal into a house or tent . . .'



Do you want to know . . .

What Umgekehrter Überschlag is?
The standard time in Petropavlovsk?
How to load a camel?
The best way to stop a riot?
The capacity of a ten-ton railway truck?
How to feed an East African native?

Maybe not! But the airmen of the 30s needed these and many other facts in the course of their everyday duties. Proof of their need is contained within the covers of a literary gem issued in those halcyon days by a thoughtful Air Ministry, modestly entitled 'AP 1081—RAF Pocket Book.' Looking like a large diary, its innocent exterior belies 300 pp of packed dynamite. Little wonder we won the war . . . who could prevail against airmen who went into battle armed with such advice as 'Swinging an aircsrew with bag and rope device,' 'Butchering in four paragraphs' and 'The prevention of Phlebotomus Fever'?

Take heed of ¶ 345 (eg) when next beset by prowling Arabs. 'If attacked, one's last refuge is the dekhil (Pron. 'daheel') . . . in imminent danger of death, choose quickly the most influential man present, sieze his clothes and call out 'DAHEELEK.' It is effective, if there is time, to tie a knot in the end of his cloak. In camp, if possible, seize any part of a tent, when its owner should give protection; obviously, if hard pressed, it is necessary to select a tent with a man in it at the moment.' Having trouble with your coalman? Never fear, for ¶ 706 provides the complete answer: 'Cow dung is a substitute for ordinary fuel. If thoroughly dried in the sun, it burns slowly and generates a good steady heat.' ¶ 955 is worth bearing in mind when off-colour, with a headache and pains in the body—the impending bout of typhoid fever could be quite enervating.

How about coping with an influx of unexpected visitors? Don't worry about having to scratch up a meal. ¶ 700 describes in splendid detail how to make an Aldershot oven on the lawn, 697 how to slaughter an ox and 708 how to cook 200 steaks! And if you run short of baking powder, ¶ 742 advises ' . . . use a little Eno's Fruit Salt'. With rising prices and the agony of choice to contend with, it is heartening to know that



Flt Lt C T Goodworth

Extracts from a Handbook for Supermen

one really doesn't need detergents. ¶ 993 is explicit: 'When a pair of clean socks is not available, those worn should be taken off, stretched and aired, and put back on the opposite feet.'

MOD would be wise to consider a reprint of AP 1081. James Bond obviously carries a copy and Lawrence of Arabia probably joined the RAF to get one. Here, in compact and explosive form, is Britain's recipe for greatness, with 1,032 sure-fire Empire-building tips. If the Cabinet required every John Bull to read a chapter with his morning egg—why, within a fortnight we should be a race of supermen! Take (eg) felling trees (Why not?). Imagine the enthusiasm with which our forests would be attacked if everyone knew he could 'cut a tree of over 12 in. diameter at a rate in minutes of $3 \times \frac{\text{mean diameter in inches}}{144}$.' Then consider how British Rail would need to run their services on time . . . ¶s 815-8 give advice in homely terms on how best to sabotage railways, locomotives and rolling stock. All this, I hasten to add, without resorting to the use of explosives! However, should it happen that Bertie Crumb has got a slab of guncotton tucked away in the loft, 814 will tell him how and where to use it best.

Englishmen always manage to get lost on country walks. They should take note of their surroundings (eg):

- a) Description of village; straw huts, mud forts, etc.
- b) Is the village on a river or canal. On which bank? If a canal, does it contain water?
- c) Does the village contain date palms or willow trees?
- d) . . . do lakes, rivers, marshes and canals in the vicinity actually contain water?

If, when strolling through that hamlet in the Cotswolds, one sees a number of village worthies in baggy trousers—beware! Find a bus stop quickly, for ¶ 339 warns that they are Kurdish warriors.

My copy of AP 1081 (I am not telling whence it came) occupies a position of honour in my bookcase. It is available for instant use in emergency. Who knows when I may need to ascertain the weight of a muid of mealies or a tierce of coffee, to confirm that *Fuochi portati dall 'aeromobile all 'ancora od ormeggiato* is indeed Italian for riding lamps, that a stopper hitch will shorten the clothes line or that there is a five-minute burial service?

©

the
best
in
smoking



MADE BY WILLS - PACEMAKERS IN TOBACCO



FOR ART
REPRODUCTIONS
OF SOUVENIR
BOOK PAINTINGS
PLEASE SEE
PAGE 62

The Avro Lancaster, designed by Roy Chadwick, was the outstanding heavy bomber of World War II. Capable of 275 mph, powered by four 1,280 hp Rolls-Royce Merlins, it ultimately carried the 22,000 lb 'Grand Slam' supersonic, high-altitude, deep-striking bomb invented by Barnes Wallace. The spearhead of Bomber Command from early 1942, it remained basically unchanged after three years' war service. Loved by its aircrews, it contributed enormously to shortening the war. The Lancaster is one of the great aeroplanes of history



Lancasters en route



by Robert G. Gurnea - American - World War II

NAAFI in the world of the RAF



The world of the Armed Forces is largely a man's world, but there's an important place in it for the women working for Naafi. They are the backbone of Naafi's club service to the British Forces.

To keep pace with the successful development of our clubs we need more young (or not so young) women for a variety of posts – club supervisors, manageresses, assistant manageresses, cooks and club assistants – and whichever job you do you will find it worthwhile and rewarding.

What makes the job so worthwhile?

You work *with* and *for* friendly, cheerful people.

You are trained for the job – and whatever your post you have the backing of experienced people.

If career-minded you can forge ahead – your ability setting the pace.

You have the chance for change and travel throughout the United Kingdom – and overseas.

Of course you get good pay for the job you do and the fringe benefits a good employer can give, *plus* attractively furnished quarters with full board, assisted holiday travel – and, for the career-minded, a first-class pension scheme.

If you are between 18 and 45 and see yourself enjoying teamwork with us in a Service community – you're the sort of person we want to meet. We can probably match your ambitions whether you want a top job – or an adventurous short-term change of scene as one of the team.

Write and tell us about yourself and the job you would like to do.

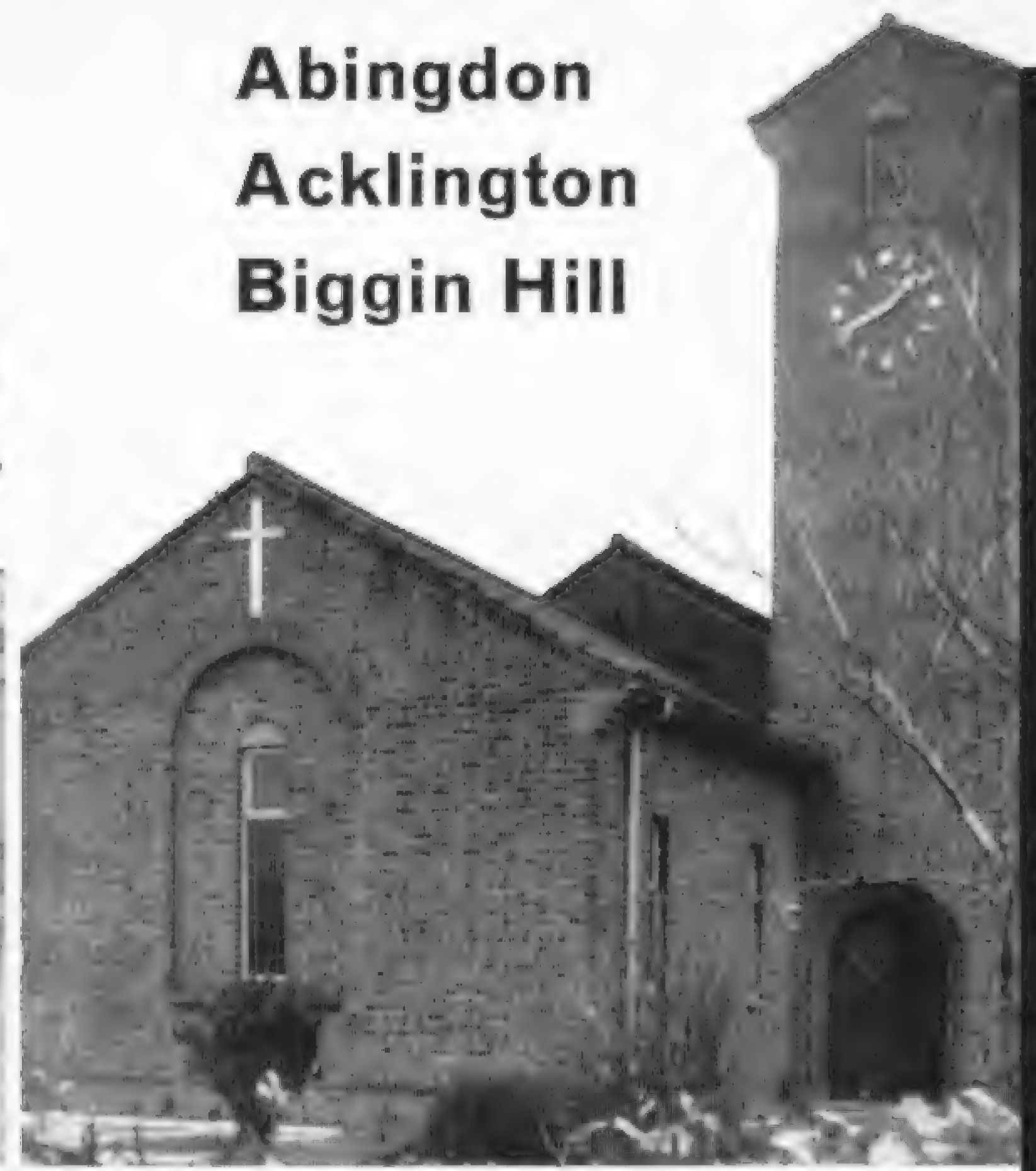
Please write to Miss O. R. Steinforth (P.D.6),

NAAFI, Imperial Court, Kennington Lane, London, SE11

Come and see for yourselves at . . .



Abingdon
Acklington
Biggin Hill



IN 1932, with 258 officers and airmen, Abingdon was the home of two Fairey Gordon single-engined bomber squadrons (Nos 15 and 40). By 1939 it had become an OTU for heavy bomber crews and some of its training aircraft were pressed into active service over Germany. At the war's end No 10 OTU was disbanded and its Wellingtons replaced by Transport Command Dakotas for the short-range transport of passengers, freight and mail. Thus on 1 July 48 the first aircraft on the Berlin Airlift took off from Abingdon. In 53 the Station took over 8 Sabres, presented to the RAF by the people of Canada, as the home base of the Overseas Ferry Unit which flew them across the Atlantic via Greenland and Iceland.

Post-war Abingdon has housed several Units. 47 Sqn's Beverleys provide global mobility for the Army's Strategic reserve, flying troops, vehicles and stores to forward airstrips promptly to prevent local troubles from spreading—an RAF role envisaged by Lord Trenchard in 1921, but now effective on a far bigger scale. The Beverleys' great lifting capacity also contributes to the nuclear deterrent by conferring tactical flexibility on the V-bomber squadrons. No 1 Parachute Training School also lives at Abingdon. Formed in 1940 at RAF Ringway, near Manchester, to train parachute troops, it continues this task with great verve, its Freefall Parachuting Display Team *The Falcons* competing internationally with great success.

Other independent Units are the Air Transport Development Unit, which develops aerial supply techniques, the Air Movements Training School, since 1964, and the Mobile Air Movements Sqn, which provides teams of Air Movement personnel for duty all over the world at very short notice, an exacting but little known task. Recently formed is the Andover Ops Conversion Unit to train pilots to handle this new and complex aircraft. Finally the new 46 Sqn is now flying the versatile Andover operationally from Abingdon.

ACKLINGTON opened in 1938 to provide live gunnery training for Fighter Command aircrew, as No 2 Air Observer School. From October 39, as a satellite to RAF Usworth, no less than 18 RAF fighter squadrons operated from it during the war, as well as three Polish, three RCAF, two Belgian Air Force and one USAAF squadron. They flew a variety of aircraft including Gladiators, Hurricanes, Spitfires, Defiants, Beaufighters, Typhoons, Mosquitos and Blenheims and accounted for more than 50 German aircraft destroyed, the first being a Do 18 on 17 October 39 by a Gladiator of 607 Sqn. By 1945 Acklington had become a forward airfield in the Newcastle sector with day and night squadrons. 19 Sqn's Mustangs were replaced by 219's Mosquitos and Nos 140 and 263 operated Meteors. 1946 brought No 2 Armament Practice School from Spilsby, and Druridge Bay firing range was visited regularly by most Fighter Command Sqs for air-to-air firing practice, but in 57 Acklington again became an operational fighter Station with Nos 29 and 66 Sqs flying night and day roles.

With the disbandment of 66 Sqn in 1960 Acklington left Fighter Command after 22 years to join 23 Gp Flying Training Command, when 6 FTS moved from Ternhill. During its entire history 6 FTS has trained over 9000 pilots—among them Wg Cdr Guy Gibson VC of Dam-busters fame: since its move to Acklington, it has seen over 400 pilots gain their Wings, many from Iraq, Lebanon, Indonesia, Jordan, Malaya, Saudi Arabia and Israel. In 1957 'A' Flt of 275 (Search and Rescue) Sqn transferred from RAF Thornaby. Now part of 202 Sqn under the operational control of No 18 Gp Coastal Command, its Helicopters have been involved in many rescues in the Northumberland area.

THE FAME OF BIGGIN HILL in the Battle of Britain is a proud memory. In May 1940 on the first day of the Dunkirk evacuation, all three Biggin Hill fighter squadrons provided air cover for our troops and in nine days fighting accounted for 36 enemy aircraft plus a score of 'possibles' for the loss of only 14 Hurricanes and Spitfires. Afterwards they were over France daily challenging the enemy in the air. Monday 12 August saw the first large-scale German attack on our fighter airfields. Biggin Hill later suffered such damage that most sections had to be moved out to requisitioned premises, but it remained operational and was given no respite until the enemy attacks were switched to London on 6 September. Even then came no let-up for the Biggin Hill squadrons, Nos 32, 79 and 610 bearing the brunt of the initial attacks until 72 and 92 relieved them. When the enemy started night raids, 141 Sqn returned to help Biggin Hill attain its grand total of 600 enemy aircraft destroyed in 1940. Sunday 15 September is now celebrated at Battle of Britain Day, but the Battle itself continued until 30 October and attacks eased off only when winter weather limited the use of airfields on both sides of the Channel. Those members of Biggin Hill squadrons killed in the Battle are named on the altar reredos of the Station's Chapel of Remembrance as some of the 'Few'.

More than 30 squadrons fought in the Biggin Hill sector and accounted for 1400 enemy aircraft, gaining over 200 decorations for gallantry and outstanding feats in action. After the war the Station became inactive until in 1949 Nos 600 and 615 arrived, joined in 1951 by No 41, a regular squadron, until the disbandment of the Auxiliary Air Force in 1957. In 58 came an entirely new task—that of selecting candidates for commissions. The Officer and Aircrew Selection Centre is now well established and almost every candidate for a commission or flying duties passes through the selection procedure at Biggin Hill.

Competition Entry Cartoons by
J/T R. BARRATT



Nine Stations are Open.
Flying Displays start at
about 2.30 pm. Ground
Exhibits in the morning.
See Posters and Local
Press for full details.

The Royal Air Force
At Home Sept 16



Admission is free . . .



**Finningley
Coltishall
Gaydon**



FINNINGLEY lies between Doncaster and Bawtry, beside the old Great North Road, an area rich in history. The Romans were there when Pontius was a Pilate, the Pilgrim Fathers originated in nearby Scrooby, and John Wesley was born at Epworth. The RAF's impact on local history is more recent (and much noisier), but Sept 36 saw the first Heyford biplanes lumber on to the Finningley grass, and V-bombers have brooded on its dispersals since 57. The Heyfords were the pride of Nos 7 and 102 Night Bomber Sqns, starting a bomber tradition which has continued almost ever since. A catalogue of all the aircraft and their famous pilots would be tedious, but during World War II, Finningley crews took part in the first 1000-bomber raid, won VCs, and found a moonlit Lincoln Cathedral the best landmark on the way back from Germany. No 616 Sqn RAuxAF, manned by local people, played its part in 'the Battle' and lived at Finningley for 10 years; former members, headed by the Duke of Portland, are still regular and welcome visitors.

Today Finningley is the OCU where all Bomber Command's V-force crews—already experienced pilots, navigators and air electronics officers—are trained in the specialist techniques associated with Vulcans and Victors, and form crews to work together at a job getting more complex every year . . . and ever more remote from the freelance galahaderie of the Battle of Britain. They spend 7 weeks in class before they climb into the instrument-packed womb of a V-bomber and roar off down a two-mile runway. Finningley is also the home of Bomber Command Development Unit, conducting trials on bombing, radar, and electronic equipment, and developing new tactics and ways of upsetting the enemy, thus contributing greatly to Bomber Command's effectiveness. A Station custom-tailored for V-bombers, Finningley holds the Vulcan Trophy, awarded annually to the most efficient Station in No 1 Group.

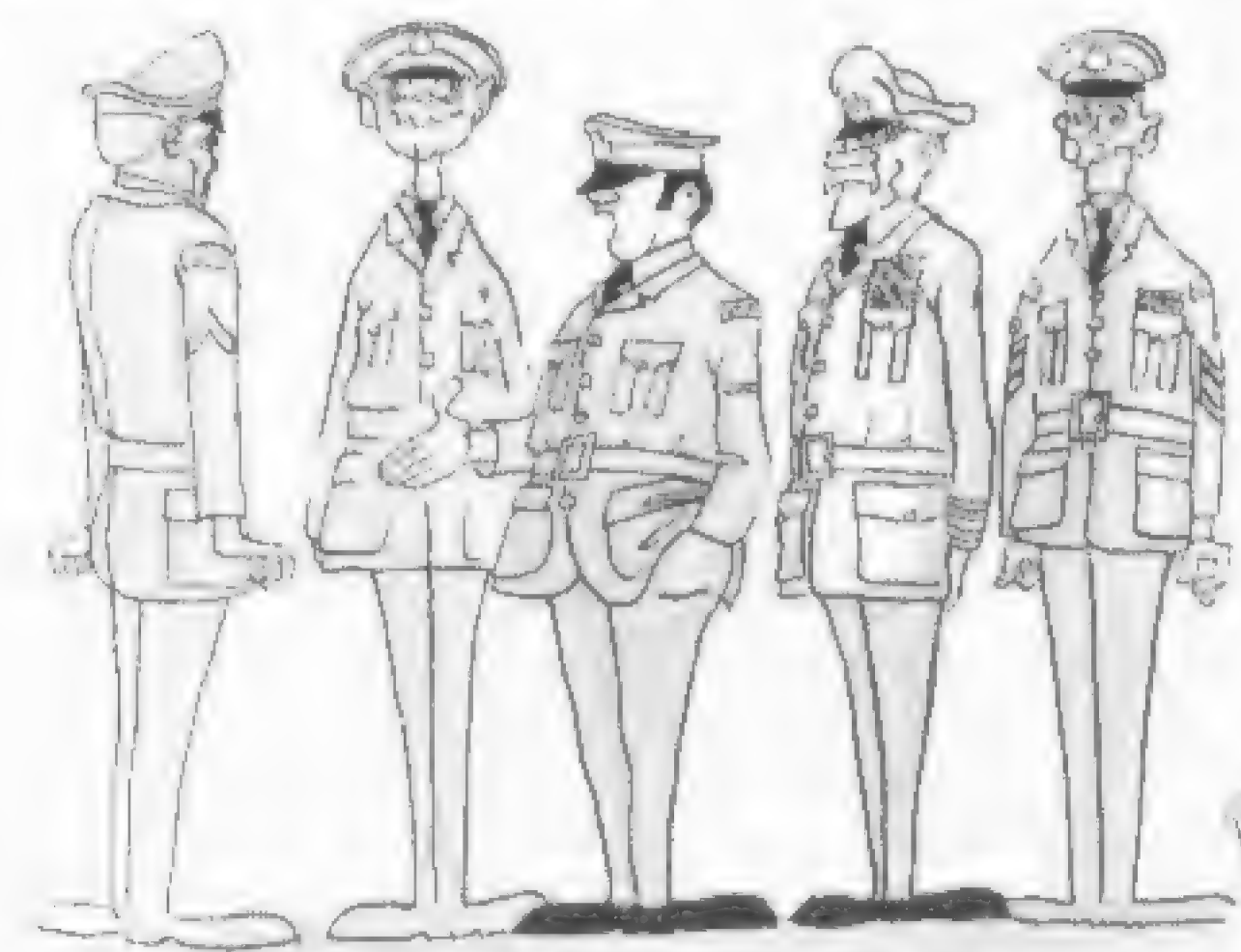
SPITFIRES of 66 Sqn fought from Coltishall before building was completed in 1940. By June it was fully operational with 242 Sqn back from France: Douglas Bader, its CO, is today Patron of the 2nd (Coltishall) Air Scout Troop. During 'the Battle' Coltishall aircraft destroyed 80 enemy aircraft, plus 21 'probables' and 16 damaged, and anti-shipping ops included that by Beauforts against the Scharnhorst and Gneisenau in the Channel in Feb 42. Whirlwind, Tempest, Mustang, Mosquito, Airocobra, Havoc, Swordfish, Albacore and Walrus aircraft were located at Coltishall. Post-war, still as a fighter base, its Units have been Nos 1, 23, 141, 264 and 74 Sqns, and the CFE Air Fighting Development Sqn. The first Station to receive Lightnings (1960), in 64 Coltishall became the home of No 226 Ops Conversion Unit, a training unit for all Lightning pilots. After intensive ground school, pilots first learn to fly the aircraft, and are then made thoroughly familiar with the Lightning's complex weapons system, including all aspects of air-to-air guided weapons. The OCU also trains experienced Lightning pilots to be IREs and Interceptor Weapons Instructors for the Lightning force, and OCU instructors and their completely operational aircraft are used during national emergencies and NATO exercises.

The Historic Aircraft Flight developed from the Battle of Britain Memorial Flight at Biggin Hill maintains a Hurricane IIc, Spitfire Mk 5b and two Spitfire PR 19s for Battle of Britain fly-pasts and other displays by selected pilots of No 226 OCU, with a Meteor III and Feiseler Storch for static display. D Flt of No 202 Helicopter Sqn, based at Coltishall since 64 for Search and Rescue, maintains a 24 hr watch at 15 mins readiness to answer any calls for help from military or civilian sources.

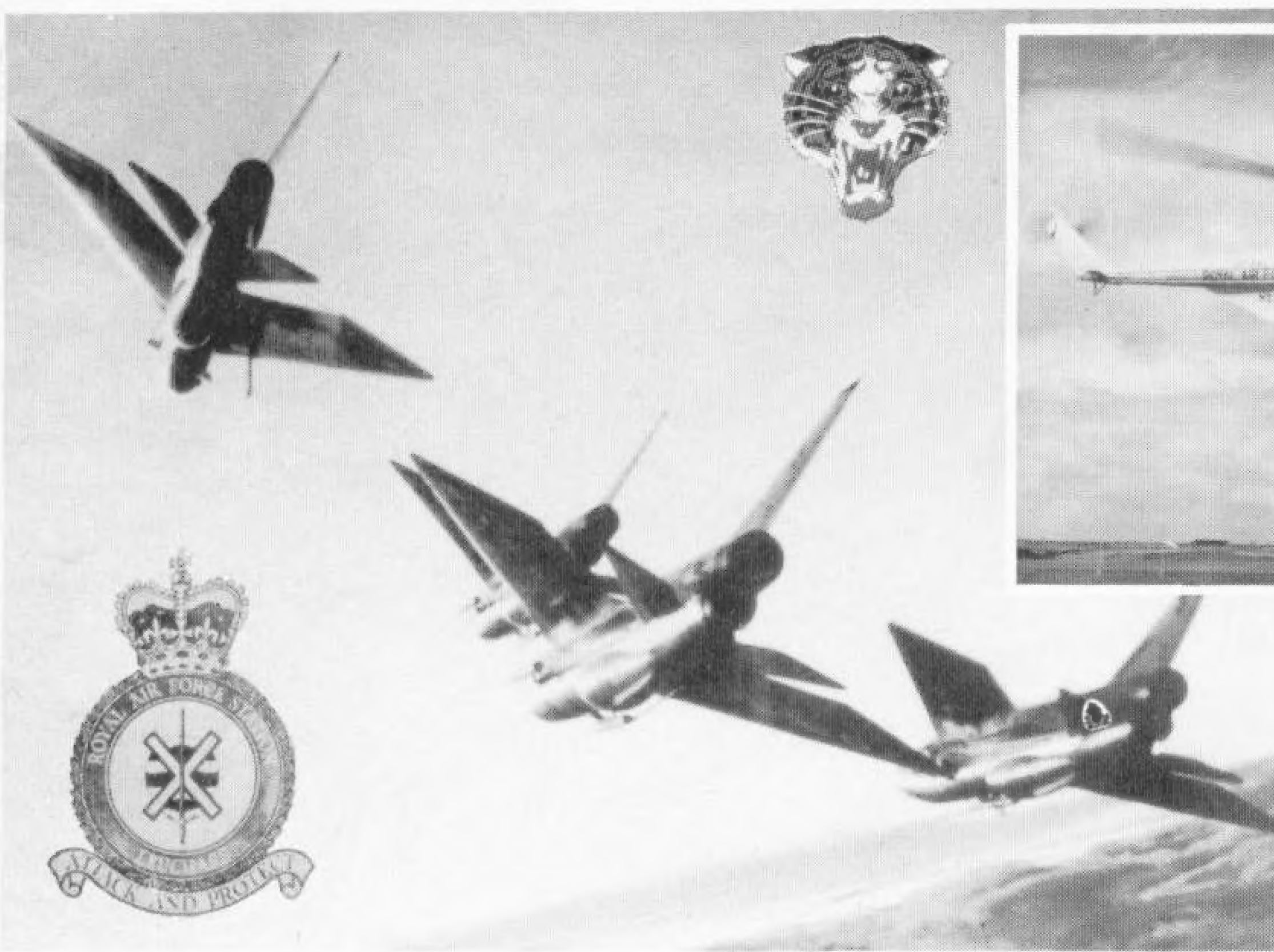
LEUCHARS, one of the oldest RAF Flying Stations, lies in Fife on the E coast of Scotland. The fascinating old University town of St Andrews, famous for its Royal and Ancient Golf Club, is 5 miles away and the Tay Road Bridge, opened by the Queen Mother in 66, gives easy access to Dundee. The REs carried out experiments with balloons there in 1911 and an airfield was built in World War I as an RN Fleet Training School. In 1920 Leuchars became officially an RAF Station serving the RAF-manned Fleet Air Arm. No 1 FTS operated there from 1935-8, when the Station transferred to Coastal Command to become 'operational', which it remained throughout the war. Its squadrons, from the RAF, Australia, New Zealand, Norway and the Netherlands, were engaged in every form of maritime ops and photographic reconnaissance. In 1950 came another major transfer, to Fighter Command, since when Leuchars has been equipped with every British fighter type. Today there are two squadrons of Lightnings, Nos 11 and 23, the *Red Eagles*, which with their missiles, form the most advanced air defence weapons system in the world. No 11 reformed with the Mk 6 at Leuchars this year when 74, the *Tiger Squadron*, moved to the Far East. 74 were hosts to the squadrons of NATO countries, with their Tiger emblem, at the 66 'Tiger Meet'. The *Red Eagles*, with their Mk 3s won the 67 Dacre Trophy for the best all-round fighter squadron. Both play a vital and exciting part in defending the UK against air attack and reinforcing our overseas bases. Also at Leuchars, 202 Sqn helicopters stand by day and night for rescue operations, and have answered hundreds of calls of distress from the sea, isles and hills. St Andrews University Air Sqn's Chipmunk Flight provides a striking contrast to the Lightnings! Finally there is the RAF Mountain Rescue Team, formed to evacuate casualties from crashed aircraft, which also helps all civilian authorities over a vast area from the Border to Deeside.



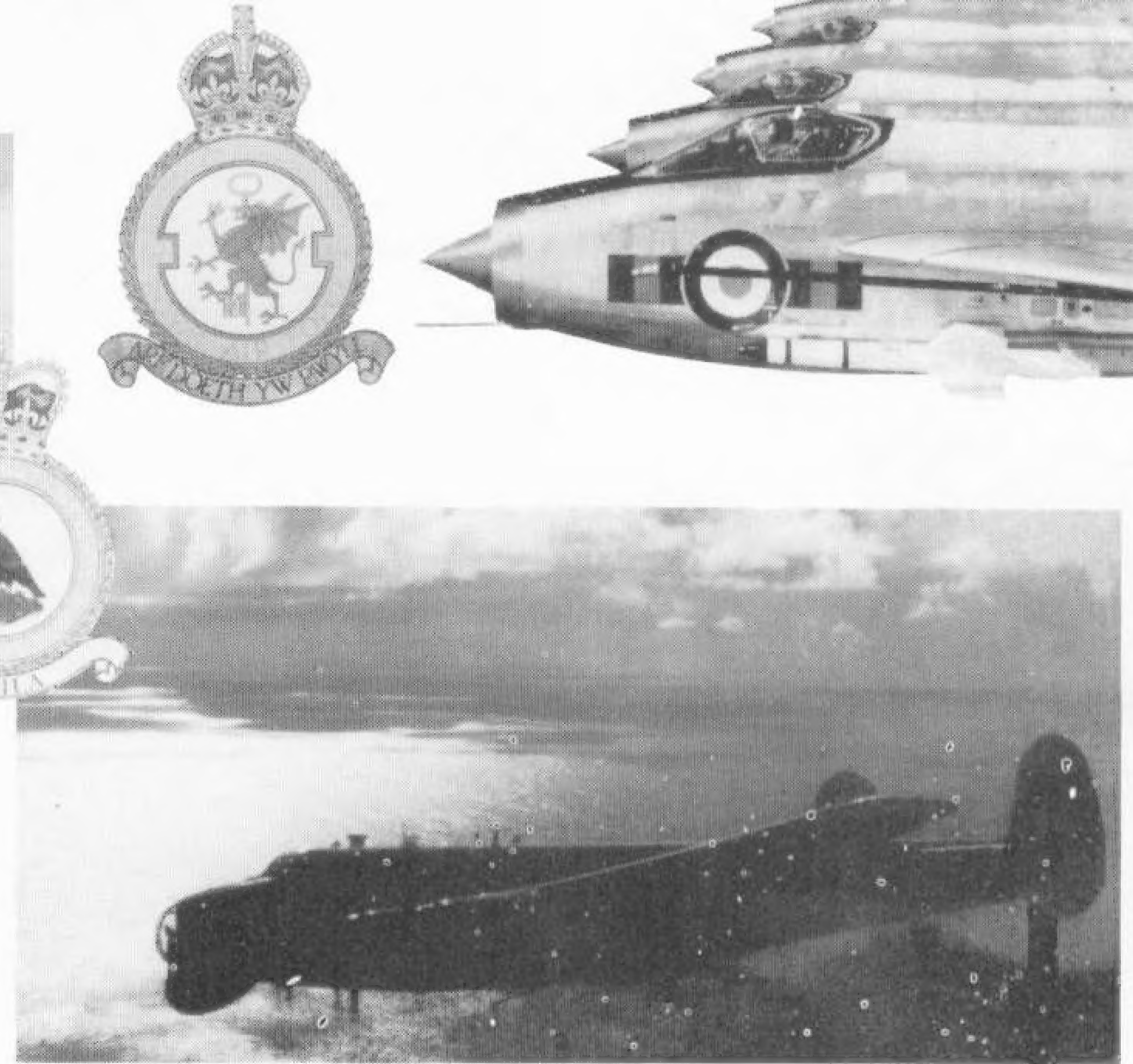
Cinema Shows,
Entertainments,
Lunch, Teas &
Refreshments.



Parade for this, parade for that,
I'd like to meet the idiot behind it all . . .



Leuchars St Athan St Mawgan



ST ATHAN in the vale of Glamorgan, within sight of the Bristol Channel, since 1936 has become the largest RAF Home Station. West Camp comprises the Station HQ and aircraft repair Units, East Camp being concerned with training. The original Units, No 4 School of Tech Training and Nos 19 and 32 MUs, remain and the PT School and University of Wales Air Sqn make 5 Units under 3 different Commands. St Athan's wartime population rose to 14,000, many men sleeping in tents or hangars, and over the years No 4 STT trained over 22,000 flight engineers for Bomber and Coastal Command heavy aircraft, symbolised in their badge by outstretched arms controlling four engines. An Admin Apprentice School ran for a few post-war years, and 55-65 saw some 7000 Boy Entrants receive initial mechanical or electrical training. No 4 STT (including the RAF Driving School) now provides some 30 courses for adults over the whole field of mechanical engineering, also attended by Commonwealth and foreign airmen. No 32 MU, largest RAF engineering Unit, is responsible for reconditioning and servicing Bomber and Transport Command aircraft, the design and manufacture of such ground equipment as jet-powered blowers for clearing runways of snow and ice, and the production of training aids. The needle and thread of the Unit badge recall the early days of fabric-covered aircraft. 19 MU, mainly civilian manned, at one time covered so large an area that aircraft must be taxied up to 4 miles for storage. Its major task today is to recondition and service fighter aircraft for Home and Overseas Commands. The Welsh motto means *The weapon of the wise is care.*

The RAF School of PT (Tech Training Command), responsible since 53 for the development and standardisation of PT and sports coaching, trains PTIs and runs courses for games coaches and officials. The RAF's famous gymnastic display team comes from St Athan, which has an outstanding sports record,

GAYDON opened in June 42 as a satellite airfield for No 12 OTU at Chipping Warden, but in September became a satellite of No 22 OTU at Wellesbourne Mountford, a Unit in No 91 Gp Bomber Command, which trained pilots, navigators, bomb aimers, airgunners and wireless operators from the UK and Commonwealth on Wellingtons, until it was disbanded in 1945. During this period, Wellingtons also flew from Gaydon as part of the 1000-bomber force, attacking targets in Germany and later undertook a number of leaflet dropping and bombing sorties over France. No 3 Glider Training School, a Flying Training Command Unit, moved in in July 45 and carried out training with Miles Masters and Hotspur gliders. After the end of the Far East war operational training at Gaydon ceased and the Station was placed on a care and maintenance basis.

Then in 53, to meet the needs of the new V-bombers under construction, work started on rebuilding the airfield, with an extended runway and new technical and domestic sites. The Station re-opened as Bomber Command's first V-bomber training unit. The training of Vickers Valiant and (from Nov 57) Handley Page Victor aircrews continued to June 65 when the unit was transferred, when Gaydon became the base of No 2 Air Navigation School which provides basic navigation and general duties training for newly commissioned navigators. On 18 April 1959 the Freedom of Royal Leamington Spa was conferred on the Station 'in appreciation of the glorious achievements and traditions of the Royal Air Force, and as an expression of the esteem in which that Force is held by the inhabitants of the Borough'.

recent highlights being the winning of the Braemar Shield for tug-of-war at the 66 Games, and the Station rugby team winning this year's Inter-Station Championship. The University of Wales Air Sqn maintains close liaison over technical and research problems and provides

FROM 36-39 Western Airways used the 40 acres of Trebulzue Big Field at St Mawgan for their Swansea, Bideford, Newquay, Penzance route. In 41 it became the Trebulzue satellite for St Eval of Coastal Command before transfer to 44 Gp Ferry Command as RAF St Mawgan, and soon began to despatch aircraft overseas, but 1942 also saw its Mosquitos operating Bay of Biscay patrols. When Transport Command re-formed in March 43, extensive alterations were made for a new role as transatlantic terminal for USAAF aircraft and despatch point for aircraft and crews proceeding to overseas theatres. The first US Liberator landed on the new E-W runway in July and until the end of the war heavy, long-range American bombers were constantly flown in. After closure in 47, it re-opened in 1951 under 19 Gp Coastal Command, under whose control it has remained. Its present role combines ops and training, the former centred on 42 Sqn, first formed in 1916, engaged for most of World War II in its present maritime strike role and now extended to other activities, a recent example of its long tradition of versatility being the tracking and plotting in its Mk 3 Shackletons of oil slicks thrown up by the *Torrey Canyon*.

St Mawgan is HQ for 22 Air-Sea Rescue Sqn, whose detachments operate from Valley Thorney Island, Manston and Chivenor. As well as its main task of rescuing aircrew in distress, 22 Sqn has a high reputation for saving lives of civilian seamen, yachtsmen, bathers and would-be cliff-climbers. In 65 the Maritime Ops Training Unit moved down from Kinloss to train crews for operational duty in the long-range maritime reconnaissance squadrons; the course lasts several months and covers basic handling of Shackleton T Mk 4s up to advanced exercises in locating and attacking submarines.

pilot training for selected undergraduates. Also at St Athan is one of 9 official RAF Mountain Rescue teams.



Please travel early to avoid the rush. Car parks provided

'You have ten seconds - Football, Rugby or the pokey ...'

The Royal Air Force At Home Sept 16



Wonderful

Golden



Jubilee

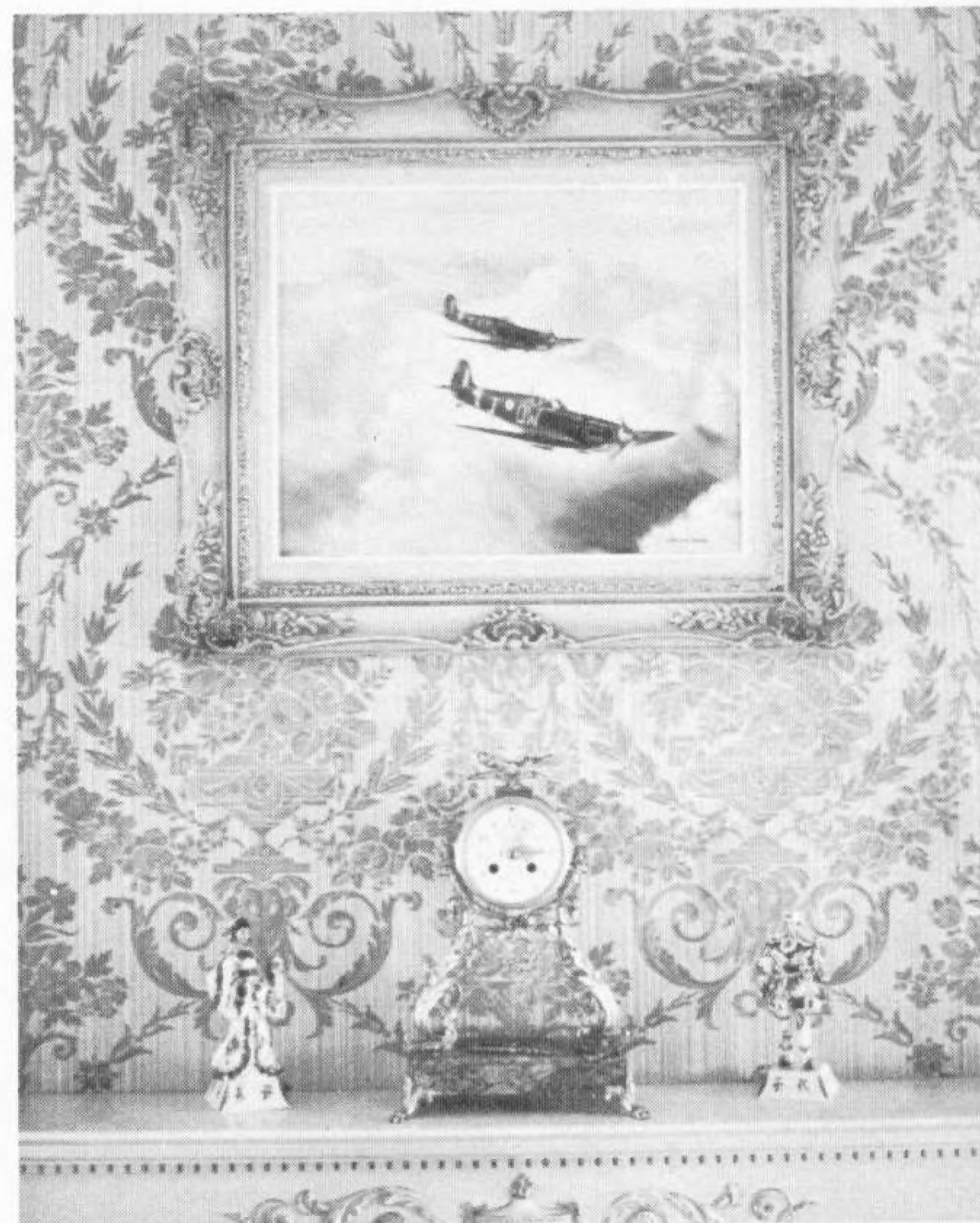
Presents

1918-1968



Whether just *setting course* (ATC), *time expired* (RAFA or RAF Reserves Club) or still serving, Slimcrest Notecases and Diaries make wonderful presents for any Serviceman, especially for such an important Anniversary. The special reduced price offered applies to all orders received on the coupon below, or quoting the letters *SB*, which reach us before the end of September. Slimcrest also guarantee to send a Royalty of 10% on all such orders to the RAF Benevolent Fund. (Slimcrest Wallets and Diaries will be on sale in leading stores this Christmas at 4 gns and 3gns respectively.) Why not order them for Christmas presents now? You couldn't find a more wonderful present; you will have avoided a last-minute problem; and you will give us plenty of time to gold block individual names or initials. Slimcrest Wallets and Diaries are made from the finest Morocco leathers, which are supple and will not crease over a very long life. For this reason, individual Unit Crests are not stocked, since they will outlast any posting. Orders for 24 or more items with special crests will, however, be undertaken without extra charge. Command, Station, Regimental, Ship's and other Fund Secretaries are invited to approach us in connection with supplying quantities of Wallets and Diaries, on which orders a 10% Royalty will be allowed for the Fund concerned.

The Ambassador Blue colour has been carefully selected for all Royal Air Force items, since it goes well with Uniform, Mess kit and civilian clothes, and will not show finger stains after prolonged use. RAF Crests may be embossed on the other three colours if required. Army (General Service Crest) and Navy (Tudor Crown) Service Notecases and Diaries also in stock. Please state details of individual names or initials precisely in block capitals when ordering.



Art reproductions of Group Captain Norman Hoad's original oil paintings for the Souvenir Book enhance the most elegant room or office. His new painting this year, *Lancaster en route*, reproduced on pages 56/7, was planned as a companion picture to last year's painting of Wellingtons *Setting Course*; just as the *Spitfire Pair*, also reproduced in the 1966 Edition, formed a pair with his earlier *Hurricane Patrol*. All four prints, mounted and titled and measuring 18 x 14½ in overall, are designed for standard size frames, obtainable in a great variety of designs and prices everywhere. The two smaller prints of Battle of Britain pilots and their aircraft, *Successful Sortie* and *Scramble* (12 x 10in) are still available, and with all orders for a full set of these six prints at the special price of £3, including packing and postage, Group Captain Hoad's other Spitfire painting *Spitfires 1940* (also 18 x 14½in) will be included free of charge, while stocks last.

The four larger pictures cost 15/- each, 27/6 the pair or 47/6 per set of 4. The two smaller prints are 10/- each or 17/6 per pair. A complete set of six, £3, plus *Spitfires 1940* included FREE. All prices include packing and postage.

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Flyover House, Great West Road, Brentford, Middlesex
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I enclose my Cheque/PO for the correct amount

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Burgundy Red ☐ Raven Black ☐

CREST Army ☐ Navy ☐ RAF ☐ Other

SB

NAME (or initials) for blocking

Name

Address

..... (IN CAPS PLS)

To Dr John Reid, Editor, RAF Souvenir Book,
Flyover House, Great West Road, Brentford, Middlesex
Please supply as ticked, as soon as available
I enclose my cheque/PO for the correct amount

Successful Sortie ☐ Scramble ☐
Hurricane Patrol ☐ Spitfire Pair ☐
Lancasters en route ☐ Setting Course ☐

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..... (IN CAPS PLS)

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and surveying, obtaining planning permissions and all building licences, and its package deal design facilities include the proper selection and installation of modern garage equipment.

Although this is a slack period for the Motor Trade, final building permissions require several months of negotiation, and now is the time to make plans for a profitable and expanding future. IDG will be pleased to draw up an initial scheme for you and to provide a budget estimate to assess its profitability. Principals are invited to write personally to the Managing Director, Dr Ing John P Millord Reid.

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ROYAL NAVY Midnight Blue
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Now, equally slender companion Planning Diaries have been introduced, which also contains a personal telephone directory. Diaries purchased now cover both 1967 & 68, and refills for future years will be available. Either separately, or as matching sets, specially reduced prices are available for direct mail orders quoting 'BF'. In addition, a 10% Royalty will be sent to Royal Air Force Charities.

Wallets 77/6 Planning Diaries 57/6
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INDIVIDUAL UNIT CRESTS FREE WITH ORDERS EXCEEDING 24 WALLETTS &/OR DIARIES
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